

AD \_\_\_\_\_

**Award Number:** W81XWH-15-1-0537

**Title:**

Testing the Model: A Phase I/II Randomized Double Blind Placebo Control Trial of Targeted Therapeutics: Liposomal Glutathione and Curcumin

**PARTNERING INVESTIGATOR:** Nancy Klimas PhD

**CONTRACTING ORGANIZATION:**

Nova Southeastern University  
Fort Lauderdale, FL 33314

**REPORT DATE:**

October 2016

**TYPE OF REPORT:**

Annual

**PREPARED FOR:**

U.S. Army Medical Research and Materiel Command  
Fort Detrick, Maryland 21702-5012

**DISTRIBUTION STATEMENT:**

Approved for public release; distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

<h1>REPORT DOCUMENTATION PAGE</h1>		<i>Form Approved</i> <b>OMB No. 0704-0188</b>	
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. <b>PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</b></small>			
<b>1. REPORT DATE (DD-MM-YYYY)</b> October 2016		<b>2. REPORT TYPE</b> Annual	
<b>4. TITLE AND SUBTITLE</b> Testing the Model: A Phase I/II Randomized Double Blind Placebo Control Trial of Targeted Therapeutics: Liposomal Glutathione and Curcumin		<b>3. DATES COVERED (From - To)</b> 30 sep 2015 - 29 Sep 2016	
		<b>5a. CONTRACT NUMBER</b>	
		<b>5b. GRANT NUMBER</b> W81XWH-15-1-0537	
<b>6. AUTHOR(S)</b> Nancy Klimas PhD		<b>5c. PROGRAM ELEMENT NUMBER</b>	
		<b>5d. PROJECT NUMBER</b>	
		<b>5e. TASK NUMBER</b>	
<b>5f. WORK UNIT NUMBER</b>			
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b>  VA Medical Center, Miami, FL Department of Medicine VA Medical Center 111-I 1201 NW 16 <sup>th</sup> Street Miami, FL 33125		<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
 Nova Southeastern University College of Pharmacy 3301 College Avenue Fort Lauderdale, FL 33314			
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b>  U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012		<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b>	
		<b>11. SPONSOR/MONITOR'S REPORT NUMBER(S)</b>	
<b>12. DISTRIBUTION / AVAILABILITY STATEMENT</b>  Approved for public release; distribution unlimited			
<b>13. SUPPLEMENTARY NOTES</b>			

**14. ABSTRACT**

We propose to perform a phase I/II study comparing two nutraceuticals and placebo that target mediators identified in our prior dynamic modeling study of Gulf War Illness (GWI). We will repeat the dynamic modeling before treatment and on therapy to assess our modeling and the impact of the interventions on the homeostatic networks we have identified, with an added focus on the glutathione/redox system.

In our prior study "Dynamic Modeling in GWI" we used an exercise stress model (rest, peak VO<sub>2</sub>, and 7 follow-up sampling points) to measure the mediators of relapse in the context of their interactive homeostatic networks. We surveyed the response of genes and blood-borne biomarkers in order to interrogate and map regulation of neuro-endocrine-autonomic-immune function in these subjects as compared to GW era sedentary healthy controls. We applied an integrative systems-based approach rooted in computational biology connecting gene expression and biomarkers to pathways and to symptoms in order to identify potential therapeutic targets as well as optimal strategies for manipulation of these targets. Using this data we have developed a virtual model of the illness, which we have used to identify potential therapeutic targets. The proposed project is directed at the validation of pharmacologic mediation of illness targets for GWI, identified using an integrative systems-based approach to the study of molecular and cellular markers.

**15. SUBJECT TERMS**

GW  
Comprehensive Molecular Profiling

**16. SECURITY CLASSIFICATION OF:****a. REPORT**

U

**b. ABSTRACT**

U

**c. THIS PAGE**

U

**17. LIMITATION  
OF ABSTRACT**

UU

**18. NUMBER  
OF PAGES**

9

**19a. NAME OF RESPONSIBLE PERSON**

USAMRMC

**19b. TELEPHONE NUMBER** (include area code)

## **Table of Contents**

	<b><u>Page</u></b>
<b>Introduction.....</b>	<b>5</b>
<b>Body.....</b>	<b>5</b>
<b>Key Research Accomplishments.....</b>	<b>6</b>
<b>Reportable Outcomes.....</b>	<b>6</b>
<b>Conclusion.....</b>	<b>6</b>
<b>References.....</b>	<b>7</b>
<b>Appendix A: Nancy Klimas, M.D. Curriculum Vitae.....</b>	<b>10</b>
<b>Appendix B: Richard Deth, Ph.D. Curriculum Vitae.....</b>	<b>51</b>
<b>Appendix C: Mary Ann Fletcher, Ph.D Curriculum Vitae.....</b>	<b>63</b>
<b>Appendix D: Gordon Broderick, Ph.D Curriculum Vitae.....</b>	<b>104</b>

## Introduction

Within months after their return from Operation Desert Storm an alarming number of Gulf War veterans began to report a variety of symptoms, including fatigue, musculoskeletal discomfort, skin rashes, and cognitive dysfunction. During deployment, these troops were subjected to a number of potentially hazardous conditions and multiple hypotheses as to the etiology of Gulf War Illness (GWI) have been considered. The symptoms of (GWI) that are most consistently reported include those which are often reported in Chronic Fatigue Syndrome (CFS). The objective of this study is to improve our understanding of GWI pathogenesis in two ways; by integration across several of the body's regulatory systems of data and knowledge collected from disparate sources, and by mapping of the coordinated interactions between these physiologic systems and the potential for altered "wiring" of these signaling networks in GWI. Using comprehensive molecular profiling, network and control theory the overarching objective of this proposal is to define the precise nature of these irregularities in immune and neuroendocrine signaling as well as the altered activation states of the corresponding cells such that treatment courses can be designed to redirect the system as a whole to normal pattern of coordinated activity.

## Body

As noted above, this project involves a clinical trial that serves as both a proof of concept study, using nutraceuticals that target nfkB, identified in our modeling studies, performing before an after dynamic modeling studies of the study volunteers, and refining our modeling work as a result. It should be noted that we have a number of funded studies that aim to improve the modeling that would lead to clinical trials, and all of the data collected in this study serves as data used by our computational modeling staff to test both the utility of intervening at nfKb (in the case of this study) and to provide an increasingly rich and complex data set to inform the other aspects of their studies.

In this study we have a SOW. It should be noted that the start time of the recruitment was delayed by a prolonged HRPO process submitted on our notice of approval in Sept 2015 after a HRPO pre-review and IRB approval; it was HRPO approved April 2016, thus recruitment began shortly afterwards. We have reset our recruitment projections accordingly, still with the intent to complete this study in the 3 year window without the need for carry over funding.

Statement of Work	Timeline	MVAMC	NSU INIM	NSU Phar	NSU Stats
1) <b>Major Task 1:</b> Perform a randomized phase I/II study comparing curcumin BCM-85, 400 mg twice a day to liposomal glutathione 630 mg bid 3 month intervention and assess safety, efficacy and biomarker response to therapy	Months				
<b>Sub-task 1: Prepare Regulatory Documents and Research Protocol for Study</b>					
Request pre-IND meeting to determine exemption if necessary submit Investigational New Drug	1 1 TO 4	NK	Complete		
Refine eligibility criteria, exclusion criteria, screening protocol	1 TO 2	NK	Complete		
Finalize consent form & human subjects protocol	2 TO 4	NK	Complete		
IRB protocol submission MVAMC	2 TO 3	NK	Complete		
IRB protocol submission NSU (with MVAMC revisions if suggested)	2 TO 5	NK	Complete		
Military 2nd level IRB review (ORP/HRPO)	4 TO 5	NK	Complete		

Submit amendments, adverse events and protocol As deviations as needed	Needed	NK			
Submit annual IRB report for continuing review	annual	NK	Complete		
<i>Milestone Achieved: Local IRB approval at MVAMC,</i>	4	NK	Complete		
<i>Milestone Achieved: HRPO approval for all protocols and local IRB approvals</i>	6	NK	Complete		
<b>Sub-task 2: preparation for initiation of clinical trial (staff/space/platform)</b>					
Study Staff definition of duties, cross training			Complete		
Coordinate with study staff to customize web based assessment platform (REDCap) Complete	1 to 3	NK	MF	RD	GB
Coordinate with study staff and research pharmacy a flow chart for all study steps, web data collection and database requirements Complete	3 to 5	NK	MF	RD	GB
Mock run of virtual subject through all time	5	NK			GB
Review platform for HIPAA, permissions, and data retrieval issues Complete	5	NK			GB
<i>Milestone Achieved: Research staff trained</i> Complete	1 to 5	NK			GB
<i>Milestone Achieved: 1st participant consented, 7 to 8M screened and enrolled</i> Complete		NK			
<i>Milestone Achieved: Study begins</i> Complete	7 to 8	NK			

Sub-task 3: Initiation of randomized control clinical trial					
Recruitment of subjects, screening, informed consent process	7 to 30	NK	Underway		
Completion of exercise challenge and specimen collection before and after 12 weeks of treatment condition	10 to 33	NK	Underway		
Monitor and report adverse events to IRB, Data monitoring board chair	7 to 33	NK/GD	Ongoing		
Milestone achieved: Clinical trial underway, meeting recruitment goals:	12,24	NK	Underway on target for 12 mo recruitment goal 4/17 Yr 3 Yr 3		
Milestone achieved: last subject (subject 75) initiates study condition	30	NK			
Milestone achieved last subject completes intervention and final assessment	33	NK			
Milestone Achieved: Study begins	7 to 8 m	NK	Achieved		
Sub-task 4: Biomarkers/lab studies					
Review established protocols and establish accession, barcoding and sample flow	1 to 3 m		MF Complete		
Coordinate with study coordinator and lab staff on scheduling, courier to lab during assessments and exercise challenge	3 to 4	NK	MF Complete		
Determine batch assays schedule, data entry plan, work with lab information system for direct data entry to REDCap platform	1 to 6 Complete	NK	MF		GB
Maintain quality control for all assays review with MF weekly	7 to 34 Ongoing				
Run assays as described in protocol, maintaining quality and timely data entry. Stats core to run monthly data status for all investigators	7 to 34 Ongoing				
Milestone achieved: lab information system platform link to REDCap	6	Complete	MF		GB
Milestone achieved completion of all assays with data entered into system	34	Yr 3	MF		GB
Projected enrollment					
Enrollment MVAMC 4 enrolled, 1 completed, 10 screened					Goal 75

<b>Major Task 2</b> (Specific Aim 2): Perform dynamic modeling studies before and after 3 months of therapy, repeating the method used previously in order to compare the response to exercise across groups and better quantify the degree of recovery in treated subjects using an exercise challenge and 9 point in time blood and saliva collections over 24 hours with genomic, cytokine, neuropeptide and cell population studies.				
<b>Sub-Task 1:</b> Apply previously developed computational modeling to before/after intervention comparisons	1 to 36	Yr 3		GB
Adapt computational modeling platform for intervention before/after analyses	1 to 12	complete		GB
Perform dynamic modeling utilizing group A/B/C designation for interim analyses	24			GB
Break blind	34	RP		GB
Completion of final analyses	36			GB
Final publications and translation plan	34-36	Yr 3		GB
<i>Milestone achieved: Interim analyses data used in modeling data</i>				
<i>Milestone Achieved: Report results computational modeling</i>	34-36			GB
<b>Specific Aim 3: Assessment of antioxidant and methylation-related metabolic status prior to, during and after acute exercise in GWI subjects before and after antioxidant interventions</b>	<b>Timeline</b>	<b>Site 1</b> (Initiating PI)	<b>Site 2</b> (Partnering PI)	
<b>Major Task 1:</b> Measurement of antioxidant and methylation pathway metabolites and vitamin B12 status	Months			
<b>Subtask 1:</b> Thiol and thioether metabolite assays: HPLC assay of redox and methylation pathway thiols and thioethers in plasma (GSH, GSSG, cysteine, methionine, homocysteine, homocystine, cystathionine, S-adenosylmethionine, S-adenosylhomocysteine) • HPLC assay of redox and methylation pathway thiols and thioethers in HPLC assay of redox and methylation pathway thiols and thioethers in PBMC mitochondria	1 to 36m		Underway RD	
<b>Subtask 2:</b> Measurement of vitamin B12 status: HPLC assay of vitamin B12 (cobalamin) species in PBMCs (cyanocobalamin, glutathionylcobalamin, hydroxocobalamin, methylcobalamin, adenosylcobalamin	1 to 36		Underway RD	
<b>Major Task 2:</b> Evaluation of DNA methylation status				
<b>Subtask 1:</b> Global DNA methylation status: Pyrosequencing-based assay of LINE-1 nuclear DNA methylation status	1 to 36		Underway RD	
<b>Subtask 2:</b> Mitochondrial DNA methylation status: Pyrosequencing-based assay of MT-ATP6 mitochondrial DNA methylation status	1 to 36		Underway RD	
<b>Milestone #1:</b> Co-author manuscript on redox and methylation status in GWI	24-36	NK	RD	

## **Key Research Accomplishments**

We prepared regulatory documents and research protocol and the study has received IRB approval for both the VA and Nova Southeastern University, thus the protocol has been finalized and is now being implemented. Study staff has been hired and trained. We have coordinated with the study staff to customize REDCap (web based assessment platform). Pharmaceuticals liposomal glutathione and curcumin, as well as placebo have been received by the VA Clinical Research pharmacist and are available for dispensing. Recruitment and screening has begun. A total of 7 GWI subjects have been screened and consented and enrolled, 3 have been withdrawn. One participant has completed the study and one other participant is currently on the study protocol. Thus the randomized clinical trial is underway.

The laboratory measures have been established, studies that are run on fresh samples are being completed per protocol, the biorepository has been established and batch samples will be withdrawn as the accrual of samples progresses. Many of the biomarker studies will be run in batches before and after intervention using the biorepository samples. These will be run as accrual reaches, 25, then 50 then 75 subjects.

Dr Richard Deth is the partnering PI at NSU for the companion project addressing Specific Aim 3. Specific aim 3 involves assessment of antioxidant and methylation-related metabolic status prior to, during and after acute exercise in GWI subjects before and after antioxidant interventions. These measurements will be carried out with batched plasma and PBMC samples following accrual of 25, 50 and 75 subjects. A research technician has been hired whose effort is dedicated to this project. In support of these assays a new HPLC system was purchased by Nova Southeastern University and methods for analysis of antioxidant and methylation pathway metabolites as well as vitamin B12 (cobalamin species) have been developed for the new instrument. Assays for measuring global and mitochondrial DNA methylation status have also been developed and are ready for samples.

## **Reportable Outcomes**

Only 5 months into accrual, with one subject having completed the 4-month trial, others on treatment with an effective screening and recruitment process in place. Blind will be maintained until the completion of the study, at which point we will be able to report on outcomes.

## **Conclusions**

The study has been initiated and recruitment is underway. Samples are being processed for immediate (eg nk cell function, flow cytometry) and batched studies. Our late HRPO approval reset our study accrual baseline, we are therefore adjusting our quarterly accrual figures to complete the study in the 3 year study time frame.

## **References**

No publications specifically from this study at this time, though our computational group is using data from this project in their ongoing work and resultant publications. We will not be publishing the study results until end of year 3.

## CURRICULUM VITAE

1. Date:

2. PERSONAL:

2a. Name: Nancy Grace Klimas

2b. Home Phone: (305) 596-5535

2c. Home Address: 10700 S.W. 90th Ave  
Miami, Florida 33176

2d. Citizenship: US

2e. Visa Type: None

2f. Non-Academic Employment: None

3. ACADEMIC EMPLOYMENT: Nova Southeastern University

3a. Office Address: NSU Institute for Neuro-Immune Medicine  
NSU Neuro-Immune Medicine Clinics  
3440 S University Dr  
Davie, FL 33314

Miami VA Medical Center  
111 –I  
1201 NW 16<sup>th</sup> st  
Miami, FL 33125

3b. Office Phones: (305) 575-3267(VA); 305-262-2855 (NSU)  
Email: nklimas@nova.edu

3c. Current Academic Rank: Professor

3d. Primary Department: Medicine

3e. Academic and Professional Appointments:

### **Current:**

12/1/2011 – present: Chair, Department of Clinical Immunology, COM, Nova Southeastern University, Davie, FL

12/1/2011 – present: Director, NSU Institute for Neuro-Immune Medicine, NSU, Davie FL

3/1/2012 – present; Medical Director, NSU Neuro-Immune Medicine Clinics

12/1/2011 – present: Professor of Medicine, Nova Southeastern University College of Osteopathic Medicine, Davie, FL

12/1/2011- present: Professor Emerita (active), Departments of Medicine, Psychology, Microbiology and Immunology, University of Miami School of Medicine, Miami, FL

1987 - present: Director of AIDS Research, and Co-Director of the AIDS Clinical Research Unit, Miami VA Medical Center

1999 – present: Director, VAMC/NSU CFS/GWI Multidisciplinary Research Center (initiated with NIH Center funding, U01 AI45940)

1985 - present: Co-Director, E.M. Papper Clinical Immunology Laboratory, Miami VA Medical Center and Department of Medicine, University of Miami School of Medicine

2011 – present: Director, GWI and CFS/ME Clinics VA Medical Center, Miami

1/1/2015-12/31/2015: Member of Budget Subcommittee, Miami VA Healthcare System

1/1/2015-12/31/2015: Member of Space Subcommittee, Miami VA Healthcare System

**Past:**

1984 - 2011: Director, VA Allergy and Immunology Clinic

1996 - 2011: Professor of Medicine, University of Miami Miller School of Medicine, Miami, FL (primary)

1997 - 2011: Professor of Psychology, University of Miami College of Arts and Sciences

1999 – 2011: Professor of Microbiology and Immunology, University of Miami Miller School of Medicine

1987 –2011: Director, University of Miami Diagnostic Immunology and Chronic Fatigue Clinics

2001 – 6 month sabbatical, Centers for Disease Control and Prevention, National Center for Infectious Diseases/ Division of Viral and Rickettsial Diseases, Viral Exanthems and Herpesviruses Branch, “Empiric Case Definition of CFS” working group.

1996 – 1998: Director, West Palm Beach VAMC Allergy Clinic

1991 - 1996: Associate Professor of Medicine, University of Miami School of Medicine

1994 - 1999: Associate Professor of Microbiology and Immunology, University of Miami School of Medicine,

1993 - 1997: Associate Professor of Psychology, University of Miami College of Arts and Sciences

1985 - 1991: Instructor and Assistant Professor of Medicine, University of Miami School of Medicine

1984 - National Cancer Institute Research Fellow; Clinical Immunology Lab, Department of Medicine, University of Miami School of Medicine

#### 4. HIGHER EDUCATION

##### 4a. Institutional:

Virginia Commonwealth University 9/1972 - 6/1973

University of South Florida, 9/1973 - 6/1976

University of Miami, M.D., 8/1976 - 6/1980

Baylor University Hospitals and Clinics, Medical Internship, 6/1980 – 6/1981

University of Miami Hospitals and Clinics, Medical Residency, 6/1981 – 6/1983

NCI Fellow; Post-Doctoral Fellowship in Diagnostic Laboratory Immunology, E.M. Papper Laboratory of Clinical Immunology, University of Miami, 6/1983 - 6/1984

#### 5. PROFESSIONAL ACTIVITIES

##### 5a. Certification, Licensure:

National Boards Part I, II and III

Florida State Medical License, 1983- current (ME41879)

American Board of Internal Medicine, 1984

ABIM Certification in Diagnostic Laboratory Immunology, 1986

Current hospital affiliations:

Miami Veteran Affairs Carter Medical Center  
University of Miami Hospital,  
Jackson Memorial Hospital

##### 5b. Publications

###### Books Published:

1. Chronic Fatigue Syndrome, P. Goodnik and N.G. Klimas, eds., American Psychiatric Press, Washington, D.C., 1993.

2. Clinical Management of Chronic Fatigue Syndrome, N. Klimas, MD and R Patarca, MD PhD, eds., The Haworth Medical Press, New York • London ,1995
3. Disability and Chronic Fatigue Syndrome. Clinical, Legal and Patient Perspectives. Klimas, N.G., Patarca, R, eds Haworth Press, Inc., New York • London, 1997

Books currently contracted:

Chronic Fatigue Syndrome: A Patient's Guide Johns Hopkins Press; Nancy Klimas, MD

Invited Book Chapters Published:

1. Fletcher, MA, Barnes Z, Broderick G and **Klimas NG**. Psychoneuroimmunology and natural killer cells: the chromium release whole blood assay. In *Protocols in Psychoneuroimmunology*. Yan, Q, ed., Humana Press, 2012.
2. **Klimas NG** Gulf War Illness, Encyclopedia of Behavioral Medicine, Springer Press 2011
3. Fletcher, MA, Klimas NG, Cytotoxic Lymphocytes. G. Fink, ed.. In Encyclopedia of Stress., 2<sup>nd</sup> edition, Academic Press, Oxford, 2007
4. **Klimas, NG**, Fletcher MA and Lawrence R. Psychoneuroimmunology and Fatigue In: Fatigue as a Window to the Brain, J DeLuca, eds 2005.
5. Maher, K, **Klimas, NG** and Fletcher, MA. Immunology of Chronic Fatigue Syndrome. In Handbook of Chronic Fatigue Syndrome. Jason, Fennell and Taylor, eds John Wiley and Sons, 1-38, 2003
6. Fletcher, MA, **Klimas, NG** and Patarca, R. Cytotoxic Lymphocytes, Fink, G., ed in Encyclopedia of Stress, Academic Press, pg. 639-643, 2000.
7. **Klimas, NG** Immune Pathogenesis of HIV/AIDS in Psychosocial and Biomedical Interactions in HIV Infection, KH Knott and K Vedhera, eds; L Temoshok, series Ed. Harwood Academic Publishers, Amsteldijk, The Netherlands. p 1-30, 2000.
8. Fletcher, M.A., Ironson, G., Goodkin, K., Antoni, M., Schneiderman, N. and **Klimas, M.A.** Stress and immune function in HIV-1 disease. In Workman, E. and Hubbard, J., eds. Stress Medicine. CRC Press, Boca Raton, FL, p229-242, 1998
9. **Klimas, N.G.** Delayed-type hypersensitivity. in Manual of Clinical Laboratory Immunology, 5th edition., Rose, N., et al, eds, Amer. Soc. Microbiology. 276-280, 1997
10. Ironson, G., Antoni, M., Schneiderman, N., LaPerriere, A., **Klimas, N.** and Fletcher, M.A. Stress Management Interventions and psychosocial predictors of progression in HIV-1 infection. in K.Goodkin, ed. Psychoneuroimmunology, Stress, Mental Disorders and Health. American Psychiatric Press, Washington, D.C., 1995
11. Schneiderman, N., Antoni, M., Ironson, G., **Klimas, N.G.**, LaPerriere, A., Kumar, M., Esterling, B. and Fletcher, M.A.. HIV-1, Immunity and Behavior. in Handbook of Human Stress and Immunity. ed by Glaser, R. and Kiecolt-Glaser. Academic Press, Inc. New York, 1995.
12. **Klimas, N.G.**, Morgan, R., Van Riel, F.. and Fletcher, M.A., Clinical Observations Regarding Use of an Anti-Depressant, Fluoxetine in Chronic Fatigue Syndrome, in

- Chronic Fatigue Syndrome, P. Goodnik and N.G. Klimas, eds., American Psychiatric Press, Washington, D.C., p95-108, 1993.
13. Patarca, R., **Klimas, N.G.**, and Fletcher, M.A. Immunological Correlates of Chronic Fatigue Syndrome. in Chronic Fatigue Syndrome, P. Goodnik and **N.G. Klimas**, eds., American Psychiatric Press, Washington, D.C., p1-22, 1993.
  14. Fletcher, M.A., Morgan, R. and **Klimas, N.G.** Immunologic Consequences of Treatment for Drug Abuse in Proceedings of the 2nd International Symposium on Drugs of Abuse, Immunity and AIDS. Friedman, H. et al., eds., Plenum Press, New York, p241-246, 1993.
  15. Fletcher, M.A., **Klimas, N.G.**, Morgan, R. and Gjerset, G. Lymphocyte Proliferation Assays. in Manual of Clinical Laboratory Immunology, 4th edition., Rose, N., et al, eds, Amer. Soc. Microbiology. pg. 213-219, 1992.
  16. **Klimas, N.G.**, Morgan, R., Salvato, F., Van Reil, F., Millon, C. and Fletcher, M.A. Chronic Fatigue Syndrome and Psychoneuroimmunology. In Stress and Disease Progression: Perspectives in Behavioral Medicine. Schneiderman, N., McCabe, P. and Baum, A., eds. Lawrence Erlbaum, Assoc., Hillsdale, NJ, P121-137, 1992.
  17. **Klimas, N.G.**, Fletcher, M.A., Walling, J., Garcia-Morales, R., Patarca, R., Moody, D. and Okarma, T. Ex Vivo Expansion, Activation and re-infusion in to Donor with rIL-2 - a Phase 1 Study. in Retroviruses of Human AIDS and Related Diseases, Girard, R, M. and Valette, L., eds, in 8th Colloque des Cent Gardes., pg. 285-290, 1992.
  18. **Klimas, N.G.**, Baron, G.C. and Fletcher, M.A. The Immunology of HIV-1 Infection. in Stress, Coping and Disease edited by Schneiderman, N., McCabe, P., Fields, T. and Skyler, J. Lawrence Erlbaum and Associates, Hillsdale, N.J. p193-209, 1991.
  19. LaPerriere, A., Antoni, M., **Klimas, N.G.**, Schneiderman, N. and Fletcher, M.A. Psychoimmunology and Stress Management in HIV-1 Infection. in Update in Psychoneuroimmunology, Gorman, J.M. and Kertzner, R.M., eds. Progress in Psychiatry, #35, Spiegel, D. series ed., American Psychiatric Press, Washington, D.C., p. 81-112, 1991
  20. Fletcher, M.A., Caldwell, K.E. and **Klimas, N.G.** The Use of Glycoprotein-Latex Conjugates in a Rapid Slide Test for Paul-Bunnell (P-B) Antibodies in Unabsorbed Sera. in Clinical Immunology Pruzanski, W, Seligmann, M., eds, Elsevier Science Publ., Amsterdam, pg 247-250, 1987.

#### Juried or Refereed Journal Articles:

1. Harvey, J. M., Broderick, G., Bowie, A., Barnes, Z. M., Katz, B. Z., O'Gorman, M. R., Vernon, S. D., Fletcher, M. A., Klimas, N. G., Taylor, R. (2016). Tracking post-infectious fatigue in clinic using routine Lab tests. BMC pediatrics, 16(1), 54. (Peer Reviewed: No)
2. Russell L, Broderick G, Taylor R, Fernandes H, Harvey J, Barnes Z, Smylie A, Collado F, Balbin EG, Katz BZ, Klimas NG, Fletcher MA. [Illness progression in chronic fatigue syndrome: a shifting immune baseline](#). BMC Immunol. 2016 Mar 10;17(1):3. doi: 10.1186/s12865-016-0142-3.
3. White RF, Steele L, O'Callaghan JP, Sullivan K, Binns JH, Golomb BA, Bloom FE, Bunker JA, Crawford F, Graves JC, Hardie A, **Klimas N**, Knox M, Meggs WJ, Melling J, Philbert MA, Grashow R. Recent research on Gulf War illness and other health problems in veterans of the 1991 Gulf War: Effects of toxicant exposures during deployment. Cortex. 2016 Jan; 74:449-75. doi: 10.1016/j.cortex.2015.08.022. Epub 2015 Sep 25. Review.

4. Craddock TJ, Del Rosario RR, Rice M, Zysman JP, Fletcher MA, **Klimas NG**, Broderick G. Achieving Remission in Gulf War Illness: A Simulation-Based Approach to Treatment Design. *PLoS One*. 2015 Jul 20;10(7):e0132774. doi: 10.1371/journal.pone.0132774. eCollection 2015.
5. Daniel L. Hall, Michael H. Antoni, Emily G. Lattie, Devika R. Jutagir, Sara J. Czaja, Dolores Perdomo, Suzanne C. Lechner, Jamie M. Stagl, Laura C. Bouchard, Lisa M. Gudenkauf, Lara Traeger, Mary Ann Fletcher & **Nancy G. Klimas** (2015): Perceived fatigue interference and depressed mood: comparison of chronic fatigue syndrome/Myalgic encephalomyelitis patients with fatigued breast cancer survivors, *Fatigue: Biomedicine, Health & Behavior*, DOI:10.1080/21641846.2015.1039289
6. Craddock TJ, Harvey JM, Nathanson L, Barnes ZM, **Klimas NG**, Fletcher MA, Broderick G. Using gene expression signatures to identify novel treatment strategies in gulf war illness. *MC Med Genomics*. 2015 Jul 9;8:36. doi: 10.1186/s12920-015-0111-3.
7. Vashishtha S, Broderick G, Craddock TJ, Fletcher MA, **Klimas NG**. Inferring Broad Regulatory Biology from Time Course Data: Have we Reached an Upper Bound under Constraints Typical of In Vivo Studies? *PLoS One*. 2015 May 18;10(5):e0127364. doi: 10.1371/journal.pone.0127364. eCollection 2015.
8. **N.G. Klimas**, G. Ironson, A. Carter, E. Balbin, L. Bateman, D. Felsenstein, S. Levine, D. Peterson, K. Chiu, A. Allen, K. Cunningham, C.G. Gottschalk, M. Fletcher, M. Hornig, C. Canning, A.L. Komaroff. Findings from a clinical and laboratory database developed for discovery of pathogenic mechanisms in myalgic encephalomyelitis/chronic fatigue syndrome. *Fatigue: Biomedicine, Health & Behavior* 3(2):75-96. DOI:10.1080/21641846.2015.1023652
9. [Hornig, M, Montoya, JG, Klimas, NG, Levine, S, Felsenstein, D, Bateman, L, Peterson, DL, Gottschalk CG, Schultz, AF, Che, X, Eddy, ML, Komaroff, AL, Lipkin, WI. Distinct plasma immune signatures in ME/CFS are present early in the course of illness. \*Sci Adv\*. 2015 Feb 27.](#)
10. Irlbeck, DM, Vernon, SD, McCleary, KK, Bateman, L, **Klimas, NG**, Lapp, CW, Peterson, DL, Brown, JR, Remlinger, KS, Wilfret, DA, Ferondelis, P. No association found between the detection of either xenotropic murine leukemia virus-related virus or polytropic murine leukemia virus and chronic fatigue syndrome in a blinded, multi-site, prospective study by the establishment and use of the SolveCFS BioBank. *BMC Research Notes*. 2014, Aug 4, 7:461.
11. Craddock TJA, Miller DB, Fletcher MA, **Klimas NG**, Broderick G. A Role for Homeostatic Drive in the Perpetuation of Complex Chronic Illness: Gulf War Illness and Chronic Fatigue Syndrome. *PLoS One*, Jan 8 2014; 9(1):e84839. doi:10.1371/journal.pone.0084839. PMID: 24416298
12. Lattie EG, Antoni MH, Fletcher MA, Czaja S, Perdomo D, Sala A, Nair S, Fu SH, Penedo FJ, **Klimas N**. [Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome \(ME/CFS\) Symptom Severity: Stress Management Skills are Related to Lower Illness Burden](#). *Fatigue*. 2013;1(4). doi: 10.1080/21641846.2013.843255.
13. Smylie AL, Broderick G, Fernandes H, Razdan S, Barnes Z, Collado F, Sol C, Fletcher MA, Klimas N. [A comparison of sex-specific immune signatures in Gulf War illness and chronic fatigue syndrome](#). *BMC Immunol*. 2013 Jun 25;14:29. doi: 10.1186/1471-2172-14-29.
14. Broderick G, Ben-Hamo R, Vashishtha S, Efroni S, Nathanson L, Barnes Z, Fletcher MA, **Klimas N** Altered immune pathway activity under exercise challenge in Gulf War Illness: an exploratory analysis *Brain Behav Immun*. 2013 Feb;28:159-69. doi: 10.1016/j.bbi.2012.11.007. Epub 2012 Nov 29.

15. Alter HJ, Mikovits JA, Switzer WM, Ruscetti FW, Lo SC, **Klimas N**, Komaroff AL, Montoya JG, Bateman L, Levine S, Peterson D, Levin B, Hanson MR, Genfi A, Bhat M, Zheng H, Wang R, Li B, Hung GC, Lee LL, Sameroff S, Heneine W, Coffin J, Hornig M, Lipkin WI. A multicenter blinded analysis indicates no association between chronic fatigue syndrome/myalgic encephalomyelitis and either xenotropic murine leukemia virus-related virus or polytropic murine leukemia virus. *MBio*. 2012 Sep 18;3(5). pii: e00266-12. doi: 10.1128/mBio.00266-12. Print 2012.
16. Broderick G, Katz BZ, Fernandes H, Fletcher MA, **Klimas N**, Smith FA, O'Gorman MR, Vernon SD, Taylor R. Cytokine expression profiles of immune imbalance in post-mononucleosis chronic fatigue. *J Transl Med*. 2012 Sep 13;10:191. doi: 10.1186/1479-5876-10-191.
17. Fletcher MA, Barnes Z, Broderick G, **Klimas NG**. Psychoneuroimmunology and natural killer cells: the chromium release whole blood assay. *Methods Mol Biol*. 2012;934:313-24. doi: 10.1007/978-1-62703-071-7\_16.
18. Broderick G, Fletcher MA, Gallagher M, Barnes Z, Vernon SD, **Klimas NG**.
19. Exploring the diagnostic potential of immune biomarker coexpression in Gulf War Illness. *Methods Mol Biol*. 2012;934:145-64. doi: 10.1007/978-1-62703-071-7\_8.
20. **Klimas NG**, Broderick G, Fletcher MA. Biomarkers for chronic fatigue. *Brain Behav Immun*. 2012 Nov;26(8):1202-10. doi: 10.1016/j.bbi.2012.06.006. Epub 2012 Jun 23.
21. Lattie EG, Antoni MH, Fletcher MA, Penedo F, Czaja S, Lopez C, Perdomo D, Sala A, Nair S, Fu SH, **Klimas N**. Stress management skills, neuroimmune processes and fatigue levels in persons with chronic fatigue syndrome. *Brain Behav Immun*. 2012 Aug;26(6):849-58. doi: 10.1016/j.bbi.2012.02.008. Epub 2012 Mar 6.
22. Jason LA, Unger ER, Dimitrakoff JD, Fagin AP, Houghton M, Cook DB, Marshall GD Jr, **Klimas N**, Snell C. Minimum data elements for research reports on CFS. *Brain Behav Immun*. 2012 Mar;26(3):401-6. Epub 2012 Jan 28.
23. Lopez C, Antoni M, Penedo F, Weiss D, Cruess S, Segotas MC, Helder L, Siegel S, **Klimas N**, Fletcher MA. A pilot study of cognitive behavioral stress management effects on stress, quality of life, and symptoms in persons with chronic fatigue syndrome. *J Psychosom Res*. 2011 Apr;70(4):328-34. Epub 2011 Jan 15.
24. Fekete EM, Antoni MH, Lopez C, Mendez AJ, Szeto A, Fletcher MA, **Klimas N**, Kumar M, Schneiderman N. Stress buffering effects of oxytocin on HIV status in low-income ethnic minority women. *Psychoneuroendocrinology*. 2011 Jul;36(6):881-90. Epub 2011 Jan 6.
25. Pett SL, Carey C, Lin E, Wentworth D, Lazovski J, Miró JM, Gordin F, Angus B, Rodriguez-Barradas M, Rubio R, Tambussi G, Cooper DA, Emery S; INSIGHT-ESPRIT Study Group. Predictors of bacterial pneumonia in Evaluation of Subcutaneous Interleukin-2 in a Randomized International Trial (ESPRIT). *HIV Med*. 2011 Apr;12(4):219-
26. Fletcher MA, Rosenthal M, Antoni M, Ironson G, Zeng XR, Barnes Z, Harvey JM, Hurwitz B, Levis S, Broderick G, **Klimas NG**. Plasma neuropeptide Y: a biomarker for symptom severity in chronic fatigue syndrome. *Behav Brain Funct*. 2010 Dec 29;6:76.
27. Carruthers BM, van de Sande MI, De Meirleir KL, **Klimas NG**, Broderick G, Mitchell T, Staines D, Powles AC, Speight N, Vallings R, Bateman L, Baumgarten-Austrheim B, Bell DS, Carlo-Stella N, Chia J, Darragh A, Jo D, Lewis D, Light AR, Marshall-Gradisbik S, Mena I, Mikovits JA, Miwa K, Murovska M, Pall ML, Stevens S. Myalgic encephalomyelitis: International Consensus Criteria. *Intern Med*. 2011 Oct;270(4):327-338. doi: 10.1111/j.1365-2796.2011.02428.x. Epub 2011 Aug 22.
28. Ginzburg E, Klimas N, Parvus C, Life J, Willix R, Barber MJ, Lin A, Comite F. Long-term

Safety of Testosterone and Growth Hormone Supplementation: A Retrospective Study of Metabolic, Cardiovascular, and Oncologic Outcomes. *J Clin Med Res*. 2010 Aug 18;2(4):159-66.

29. Brenu EW, van Driel ML, Staines DR, Ashton KJ, Ramos SB, Keane J, **Klimas NG**, Marshall-Gradisnik SM. Immunological abnormalities as potential biomarkers in Chronic Fatigue Syndrome/Myalgic Encephalomyelitis. *J Transl Med*. 2011 May 28;9:81.
30. Holodniy M, Brown ST, Cameron DW, Kyriakides TC, Angus B, Babiker A, Singer J, Owens DK, Anis A, Goodall R, Hudson F, Piaseczny M, Russo J, Schechter M, Deyton L, Darbyshire J; OPTIMA Team. Results of antiretroviral treatment interruption and intensification in advanced multi-drug resistant HIV infection from the OPTIMA trial. *PLoS One*. 2011 Mar 31;6(3):e14764.
31. Lopez C, Antoni M, Penedo F, Weiss D, Cruess S, Segotas MC, Helder L, Siegel S, **Klimas N**, Fletcher MA. A pilot study of cognitive behavioral stress management effects on stress, quality of life, and symptoms in persons with chronic fatigue syndrome. *J Psychosom Res*. 2011 Apr;70(4):328-34. Epub 2011 Jan 15.
32. Fekete EM, Antoni MH, Lopez C, Mendez AJ, Szeto A, Fletcher MA, **Klimas N**, Kumar M, Schneiderman N. Stress buffering effects of oxytocin on HIV status in low-income ethnic minority women. *Psychoneuroendocrinology*. 2011 Jul;36(6):881-90. Epub 2011 Jan 6.
33. Fletcher MA, Rosenthal M, Antoni M, Ironson G, Zeng XR, Barnes Z, Harvey JM, Hurwitz B, Levis S, Broderick G, **Klimas NG**. Plasma neuropeptide Y: a biomarker for symptom severity in chronic fatigue syndrome. *Behav Brain Funct*. 2010 Dec 29;6:76.
34. Broderick G, Kreitz A, Fuite J, Fletcher MA, Vernon SD, **Klimas N**. A pilot study of immune network remodeling under challenge in Gulf War Illness. *Brain Behav Immun*. 2011 Feb;25(2):302-13. Epub 2010 Oct 16.
35. Broderick G, Fuite J, Kreitz A, Vernon SD, **Klimas N**, Fletcher MA. Circadian rhythms of cytokine secretion in chronic fatigue syndrome. *Brain Behav Immun*. 2010 Jun 19. [Epub ahead of print] No abstract available. PMID: 20600817 [print]
36. Fletcher MA, Zeng XR, Maher K, Levis S, Hurwitz B, Antoni M, Broderick G, **Klimas NG**. Biomarkers in chronic fatigue syndrome: evaluation of natural killer cell function and dipeptidyl peptidase IV/CD26. *PLoS One*. 2010 May 25;5(5):e10817. PMID: 20520837
37. Broderick G, Fuite J, Kreitz A, Vernon SD, **Klimas N**, Fletcher MA. A formal analysis of cytokine networks in Chronic Fatigue Syndrome. *Brain Behav Immun*. 2010 May 4. [Epub ahead of print] PMID: 20447453
38. Fletcher MA, Zeng XR, Barnes Z, Levis S, **Klimas NG**. Plasma cytokines in women with chronic fatigue syndrome. *J Transl Med*. 2009 Nov 12;7:96. PMID: 19909538
39. Rodger AJ, Fox Z, Lundgren JD, Kuller LH, Boesecke C, Gey D, Skoutelis A, Goetz MB, Phillips AN; INSIGHT Strategies for Management of Antiretroviral Therapy (SMART) Study Group. Activation and coagulation biomarkers are independent predictors of the development of opportunistic disease in patients with HIV infection. *J Infect Dis*. 2009 Sep 15;200(6):973-83.
40. Hurwitz BE, Coryell VT, Parker M, Martin P, Laperriere A, **Klimas NG**, Sfakianakis GN, Bilsker MS. Chronic fatigue syndrome: illness severity, sedentary lifestyle, blood volume and evidence of diminished cardiac function. *Clin Sci (Lond)*. 2009 Oct 19;118(2):125-35.
41. Whistler T, Fletcher MA, Lonergan W, Zeng XR, Lin JM, Laperriere A, Vernon SD, **Klimas NG**. Impaired immune function in Gulf War Illness. *BMC Med Genomics*. 2009 Mar 5;2:12

42. Hurwitz BE, Coryell VT, Parker M, Martin P, Laperriere A, **Klimas NG**, Sfakianakis GN, Bilsker MS. Chronic fatigue syndrome: illness severity, sedentary lifestyle, blood volume and evidence of diminished cardiac function. *Clin Sci (Lond)*. 2009 May 26. [Epub ahead of print]
43. Fekete EM, Antoni MH, Lopez CR, Durán RE, Penedo FJ, Bandiera FC, Fletcher MA, **Klimas N**, Kumar M, Schneiderman N. Men's serostatus disclosure to parents: associations among social support, ethnicity, and disease status in men living with HIV. *Brain Behav Immun*. 2009 Jul;23(5):693-9. Epub 2009 Jan 21
44. Mocroft A, Wyatt C, Szczech L, Neuhaus J, El-Sadr W, Tracy R, Kuller L, Shlipak M, Angus B, Klinker H, Ross M; **INSIGHT SMART Study Group**. Collaborators Interruption of antiretroviral therapy is associated with increased plasma cystatin C. *AIDS*. 2009 Jan 2;23(1):71-82
45. Fox Z, Phillips A, Cohen C, Neuhaus J, Baxter J, Emery S, Hirschel B, Hullsiek KH, Stephan C, Lundgren J; SMART Study Group. Viral resuppression and detection of drug resistance following interruption of a suppressive non-nucleoside reverse transcriptase inhibitor-based regimen. *AIDS*. 2008 Nov 12;22(17):2279-89
46. Burman W, Grund B, Neuhaus J, Douglas J Jr, Friedland G, Telzak E, Colebunders R, Paton N, Fisher M, Rietmeijer C; SMART Study Group and INSIGHT. Episodic antiretroviral therapy increases HIV transmission risk compared with continuous therapy: results of a randomized controlled trial. *J Acquir Immune Defic Syndr*. 2008 Oct 1;49(2):142-50.
47. SMART Study Group, El-Sadr WM, Grund B, Neuhaus J, Babiker A, Cohen CJ, Darbyshire J, Emery S, Lundgren JD, Phillips A, Neaton JD. Risk for opportunistic disease and death after reinitiating continuous antiretroviral therapy in patients with HIV previously receiving episodic therapy: a randomized trial. *Ann Intern Med*. 2008 Sep 2;149(5):289-99.
48. Strategies for Management of Antiretroviral Therapy (SMART) Study Group, Lundgren JD, Babiker A, El-Sadr W, Emery S, Grund B, Neaton JD, Neuhaus J, Phillips AN. Inferior clinical outcome of the CD4+ cell count-guided antiretroviral treatment interruption strategy in the SMART study: role of CD4+ Cell counts and HIV RNA levels during follow-up. *J Infect Dis*. 2008 Apr 15;197(8):1145-55
49. Strategies for Management of Antiretroviral Therapy (SMART) Study Group, Emery S, Neuhaus JA, Phillips AN, Babiker A, Cohen CJ, Gatell JM, Girard PM, Grund B, Law M, Losso MH, Palfreeman A, Wood R. Major clinical outcomes in antiretroviral therapy (ART)-naïve participants and in those not receiving ART at baseline in the SMART study. *J Infect Dis*. 2008 Apr 15;197(8):1084-6.
50. Greeson JM, Hurwitz BE, Llabre MM, Schneiderman N, Penedo FJ, **Klimas NG**. Psychological distress, killer lymphocytes and disease severity in HIV/AIDS. *Brain Behav Immun*. 2008 Aug;22(6):901-11. Epub 2008 Mar 5.
51. Klimas N, Koneru AO, Fletcher MA. Overview of HIV. *Psychosom Med*. 2008 Jun;70(5):523-30
52. **Klimas NG**, Koneru AO. Chronic fatigue syndrome: inflammation, immune function, and neuroendocrine interactions. *Curr Rheumatol Rep*. 2007 Dec;9(6):482-7.
53. Fletcher, MA, Whistler, T, Vernon, S, Craddock, J and **Klimas, NG** "Mechanisms of NK cell dysfunction in GWI" *Genomics* 2008 under review
54. **Klimas, Nancy**, O'Brien Ann. "Overview of HIV/AIDS and the Challenges We Face" special HIV/AIDS supplement to *Psychosomatic Medicine*. *Psychosom Med*. 2008 Jun;70(5):523-30.

55. **Klimas NG**, Koneru AO Chronic fatigue syndrome: inflammation, immune function, and neuroendocrine interactions. Curr Rheumatol Rep. 2007 Dec;9(6):482-7.
56. Jones JF, Kohl KS, Ahmadipour N, Bleijenberg G, Buchwald D, Evengard B, Jason LA, **Klimas NG**, Lloyd A, McCleary K, Oleske JM, White PD; Brighton Collaboration Fatigue Working Group. Fatigue: case definition and guidelines for collection, analysis, and presentation of immunization safety data. Vaccine. 2007 Aug 1;25(31):5685-96. Epub 2007 Mar 12.
57. ESPRIT Research Group, Fox Z, Antunes F, Davey R, Gazzard B, **Klimas N**, Labriola A, Losso M, Neaton JD, Phillips AN, Ruxrungtham K, Staszewski S, Weiss L, Lundgren JD. Predictors of CD4 count change over 8 months of follow up in HIV-1-infected patients with a CD4 count  $\geq 300$  cells/microL who were assigned to 7.5 MIU interleukin-2. HIV Med. 2007 Mar;8(2):112-23
58. Jones JF, Kohl KS, Ahmadipour N, Bleijenberg G, Buchwald D, Evengard B, Jason LA, **Klimas NG**, Lloyd A, McCleary K, Oleske JM, White PD; Brighton Collaboration Fatigue Working Group. Fatigue: case definition and guidelines for collection, analysis, and presentation of immunization safety data. Vaccine. 2007 Aug 1;25(31):5685-96. Epub 2007 Mar 12.
59. ESPRIT Research Group, Fox Z, Antunes F, Davey R, Gazzard B, **Klimas N**, Labriola A, Losso M, Neaton JD, Phillips AN, Ruxrungtham K, Staszewski S, Weiss L, Lundgren JD. Predictors of CD4 count change over 8 months of follow up in HIV-1-infected patients with a CD4 count  $\geq 300$  cells/microL who were assigned to 7.5 MIU interleukin-2. HIV Med. 2007 Mar;8(2):112-23
60. Siegel SD, Antoni MH, Fletcher MA, Maher K, Segota MC, **Klimas N**. Impaired natural immunity, cognitive dysfunction, and physical symptoms in patients with chronic fatigue syndrome: preliminary evidence for a subgroup? Psychosom Res. 2006 Jun;60(6):559-66.
61. Eisen SA, Karlinsky J, Jackson L, Blanchard M, Kang H, Murphy F, Alpern, R, Reda D, Toomey R, Battistone M, Parks B, **Klimas N**, Pak H, Hunter J, Lyons M, Henderson W, Spouses of Persian Gulf War I veterans: medical evaluation of a U.S. cohort. Mil Med. 2006 Jul ;171:613-8.
62. Craddock RC, Taylor R, Broderick G, Whistler T, **Klimas N**, Unger ER. Exploration of statistical dependence between illness parameters using the entropy correlation coefficient. Pharmacogenomics. 2006 Apr;7(3):421-8.
63. Broderick G, Craddock RC, Whistler T, Taylor R, **Klimas N**, Unger ER, Identifying illness parameters in fatiguing syndromes using classical projection methods. Pharmacogenomics. 2006 Apr;7(3):407-19.
64. Whistler T, Taylor R, Craddock RC, Broderick G, **Klimas N**, Unger ER. Gene expression correlates of unexplained fatigue. Pharmacogenomics. 2006 Apr;7(3):395-405.
65. Carrico AW, Antoni MH, Duran RE, Ironson G, Penedo F, Fletcher MA, **Klimas N**, Schneiderman N. Reductions in depressed mood and denial coping during cognitive behavioral stress management with HIV-Positive gay men treated with HAART. Ann Behav Med. 2006 Apr;31(2):155-64.
66. Antoni MH, Carrico AW, Duran RE, Spitzer S, Penedo F, Ironson G, Fletcher MA, **Klimas N**, Schneiderman N. Randomized clinical trial of cognitive behavioral stress management on human immunodeficiency virus viral load in gay men treated with highly active antiretroviral therapy. Psychosom Med. 2006 Jan-Feb;68(1):143-51.
67. Ironson G, O'Leirigh C, Fletcher MA, Laurenceau JP, Balbin E, **Klimas N**, Schneiderman N, Solomon G. Psychosocial factors predict CD4 and viral load change in men and women with human immunodeficiency virus in the era of highly active

- antiretroviral treatment. *Psychosom Med*. 2005 Nov-Dec;67(6):1013-21.
68. Antoni MH, Carrico AW, Duran RE, Spitzer S, Penedo F, Ironson G, Fletcher MA, **Klimas N**, Schneiderman N. Randomized clinical trial of cognitive behavioral stress management on human immunodeficiency virus viral load in gay men treated with highly active antiretroviral therapy. *Psychosom Med*. 2006 Jan-Feb;68(1):143-51
  69. Ironson G, O'Cleirigh C, Fletcher MA, Laurenceau JP, Balbin E, **Klimas N**, Schneiderman N, Solomon G. Psychosocial factors predict CD4 and viral load change in men and women with human immunodeficiency virus in the era of highly active antiretroviral treatment. *Psychosom Med*. 2005 Nov-Dec;67(6):1013-21
  70. Eisen SA, Kang HK, Murphy FM, Blanchard MS, Reda DJ, Henderson WG, Toomey R, Jackson LW, Alpern R, Parks BJ, **Klimas N**, Hall C, Pak HS, Hunter J, Karlinksky J, Battistone MJ, Lyons MJ; Gulf War Study Participating Investigators. Gulf War veterans' health: medical evaluation of a U.S. cohort. *Ann Intern Med*. 2005 Jun 7;142(11):881-90. Summary for patients in: *Ann Intern Med*. 2005 Jun 7;142(11):I22.
  71. Maher KJ, **Klimas NG**, Fletcher MA. Chronic fatigue syndrome is associated with diminished intracellular perforin. *Clin Exp Immunol*. 2005 Dec;142(3):505-11.
  72. Carrico AW, Antoni MH, Pereira DB, Fletcher MA, **Klimas N**, Lechner SC, Schneiderman N. Cognitive behavioral stress management effects on mood, social support, and a marker of antiviral immunity are maintained up to 1 year in HIV-infected gay men. *Int J Behav Med*. 2005;12(4):218-26.
  73. Hurwitz b, Brownley K, Motivala S, Milanovich J, Kibler J, Fillion L, leBlanc W, Kumar M, **Klimas, N** Fletcher MA, and Schneiderman N. Sympathoimmune Anomalies Underlying the Response to Stressful Challenge in HIV Spectrum Disease. *Psychosomatic Medicine* 67:798-806 (2005)
  74. Glaser R, Padgett DA, Litsky ML, Baiocchi RA, Yang EV, Chen M, Yeh PE, **Klimas NG**, Marshall GD, Whiteside T, Herberman R, Kiecolt-Glaser J, Williams MV.. Stress-associated changes in the steady-state expression of latent Epstein-Barr virus: Implications for chronic fatigue syndrome and cancer. *Brain Behav Immun*. 2005 Mar;19(2):91-103
  75. Antoni MH, Cruess DG, **Klimas N**, Carrico AW, Maher K, Cruess S, Lechner SC, Kumar M, Lutgendorf S, Ironson G, Fletcher MA, Schneiderman N. Increases in a marker of immune system reconstitution are predated by decreases in 24-h urinary cortisol output and depressed mood during a 10-week stress management intervention in symptomatic HIV-infected men. *J Psychosom Res*. 2005 Jan;58(1):3-13.
  76. McPherson-Baker S, Jones D, Duran RE, **Klimas N**, Schneiderman N.. Development and Implementation of a Medication Adherence Training Instrument for Persons Living With HIV: The MATI. *Behav Modif*. 2005 Mar;29(2):286-317.
  77. Hurwitz BE, Klimas NG, Llabre MM, Maher KJ, Skyler JS, Bilsker MS, McPherson-Baker S, Lawrence PJ, Laperriere AR, Greeson JM, Klaus JR, Lawrence R, Schneiderman N. HIV, metabolic syndrome X, inflammation, oxidative stress, and coronary heart disease risk : role of protease inhibitor exposure. *Cardiovasc Toxicol*. 2004;4(3):303-16.
  78. Gonzalez JS, Penedo FJ, Antoni MH, Duran RE, McPherson-Baker S, Ironson G, Isabel Fernandez M, **Klimas NG**, Fletcher MA, Schneiderman N. Social support, positive states of mind, and HIV treatment adherence in men and women living with HIV/AIDS. *Health Psychol*. 2004 Jul;23(4):413-8.
  79. Reeves WC, Lloyd A, Vernon SD, **Klimas N**, Jason LA, Bleijenberg G, Evengard B, White PD, Nisenbaum R, Unger ER, .Identification of ambiguities in the 1994 chronic

- fatigue syndrome research case definition and recommendations for resolution. BMC Health Serv Res. 2003 Dec 31;3(1):25
80. Evengard B, **Klimas N**. Chronic fatigue syndrome: probable pathogenesis and possible treatments. *Drugs*. 2002;62(17):2433-46. Review
  81. Patarca R, Isava A, Campo R, Rodriguez NJ, Nunez E, Alter M, Marchette M, Sanabia MM, Mitchell C, Rivera D, Scott G, Jayaweera D, Moreno J, Boulanger C, Kolber M, Mask CW, Sierra EM, Vallejo R, Page JB, **Klimas NG**, Fletcher M. Human immunodeficiency virus type 1 pharmacogenomics in clinical practice: relevance of HIV-1 drug resistance testing (Part 2). *J Environ Pathol Toxicol Oncol*. 2003;22(4):235-79. Review
  82. Patarca R, Isava A, Campo R, Rodriguez NJ, Nunez E, Alter M, Marchette M, Sanabia MM, Mitchell C, Rivera D, Scott G, Jayaweera D, Moreno J, Boulanger C, Kolber M, Mask CW, Sierra EM, Vallejo R, Page JB, **Klimas NG**, Fletcher MA. Human immunodeficiency virus type 1 pharmacogenomics in clinical practice: relevance of HIV-1 drug resistance testing (Part 1). *J Environ Pathol Toxicol Oncol*. 2003;22(3):201-34. Review
  83. Pereira DB, Antoni MH, Danielson A, Simon T, Efantis-Potter J, Carver CS, Duran RE, Ironson G, **Klimas N**, Fletcher MA, O'Sullivan MJ. Psychological distress is associated with decreased memory helper T-cell and B-cell counts in pre-AIDS HIV seropositive men and women but only in those with low viral load. *Psychosom Med*. 2003 Jul-Aug;65(4):627-35
  84. Cruess DG, Antoni MH, Gonzalez J, Fletcher MA, **Klimas N**, Duran R, Ironson G, Schneiderman N. Sleep disturbance mediates the association between psychological distress and immune status among HIV-positive men and women on combination antiretroviral therapy. *J Psychosom Res*. 2003 Mar;54(3):185-9
  85. Pereira DB, Antoni MH, Danielson A, Simon T, Efantis-Potter J, Carver CS, Duran RE, Ironson G, **Klimas N**, O'Sullivan MJ. Life stress and cervical squamous intraepithelial lesions in women with human papillomavirus and human immunodeficiency virus. *Psychosom Med*. 2003 May-Jun;65(3):427-34
  86. Pereira DB, Antoni MH, Danielson A, Simon T, Efantis-Potter J, Carver CS, Duran RE, Ironson G, **Klimas N**, Fletcher MA, O'Sullivan MJ. Stress as a predictor of symptomatic genital herpes virus recurrence in women with human immunodeficiency virus. *J Psychosom Res*. 2003 Mar;54(3):237-44
  87. Motivala, S.J., Hurwitz, B.E., Llabre, M.M., **Klimas, N.G.**, Fletcher, M.A., Antoni, M.H., LeBlanc, W.G., & Schneiderman, N. Psychological distress is associated with decreased memory T-helper and B-cell counts in pre-AIDS HIV seropositive men and women but only in those with low viral load. *Psychosomatic Med*. 65(4), 627-635, 2003
  88. Maher KJ, **Klimas NG**, Hurwitz B, Schiff R, Fletcher MA. Quantitative fluorescence measures for determination of intracellular perforin content. *Clin Diagn Lab Immunol*. 2002 Nov;9(6):1248-52
  89. Antoni MH, Cruess DG, **Klimas N**, Maher K, Cruess S, Kumar M, Lutgendorf S, Ironson G, Schneiderman N, Fletcher MA. Stress management and immune system reconstitution in symptomatic HIV-infected gay men over time: effects on transitional naive T cells (CD4(+)CD45RA(+)CD29(+)). *Am J Psychiatry*. 2002 Jan;159(1):143-5.
  90. Gulf War Veterans' Health: A Comprehensive Medical Evaluation of a Population Based Cohort. S Eisen, F Murphy, D. Reda, W Henderson, R Toomey, L Jackson, R Alpern, B Parks, **N Klimas**, C Hall, H Pak, J Hunter, J Karlinsky, M Battistone, M Lyons. Submitted JAMA April, 2003
  91. Fletcher, MA, Maher, K and **Klimas, NG**. Natural killer cell function in chronic fatigue

- syndrome. Clin Appl Immunol Rev. 2:129-139, 2002.
92. Ironson G, Balbin E, Solomon G, Fahey J, **Klimas N**, Schneiderman N, Fletcher MA. Relative preservation of natural killer cell cytotoxicity and number in healthy AIDS patients with low CD4 cell counts. AIDS 2001 Nov 9;15(16):2065-73
  93. Brownley, KA, Milanovich JR, Motivala SJ, Schneiderman N, Fillion L, Graves JA, **Klimas, NG**, Fletcher, MA and Hurwitz BE. Autonomic and cardiovascular function in HIV spectrum disease: early indications of cardiac pathophysiology. Clin Autonomic Res. 11:319-326, 2001.
  94. Patarca, R, Mark, T, Fletcher, MA and **Klimas, NG**. Immunology of chronic fatigue syndrome. J Chronic Fatigue Syndrome 6: 69-107, 2000.
  95. Patarca, R, **Klimas, N.G.** and Fletcher, M.A. Immunotherapy of chronic fatigue syndrome: Therapeutic interventions aimed at modulating the Th1/Th2 cytokine expression balance. J Chronic Fatigue Syndrome. 8: 3-37, 2001.
  96. Patarca-Montero, R, Antoni, M, Fletcher, MA and **Klimas, N**. Cytokine and other immunologic markers in chronic fatigue syndrome and their relationship to neuropsychological factors. Applied Neuropsychiatry, 8:51-62, 2001.
  97. Ironson G, Balbin E, Solomon G, Fahey J, **Klimas N**, Schneiderman N, Fletcher MA. Relative preservation of natural killer cell cytotoxicity and number in healthy AIDS patients with low CD4 cell counts. AIDS. 2001 Nov 9;15(16):2065-73
  98. McPherson-Baker S, Malow RM, Penedo F, Jones DL, Schneiderman N, **Klimas NG**. Enhancing adherence to combination antiretroviral therapy in non-adherent HIV-positive men. AIDS Care. 2000 Aug;12(4):399-404.
  99. Cruess DG, Antoni MH, Schneiderman N, Ironson G, McCabe P, Fernandez JB, Cruess SE, **Klimas N**, Kumar M. Cognitive-behavioral stress management increases free testosterone and decreases psychological distress in HIV-seropositive men. Health Psychol. 2000 Jan;19(1):12-20.
  100. Antoni MH, Cruess DG, Cruess S, Lutgendorf S, Kumar M, Ironson G, **Klimas N**, Fletcher MA, Schneiderman N. Cognitive-behavioral stress management intervention effects on anxiety, 24-hr urinary norepinephrine output, and T-cytotoxic/suppressor cells over time among symptomatic HIV-infected gay men. J Consult Clin Psychol. 2000 Feb;68(1):31-45.
  101. Cruess S, Antoni M, Cruess D, Fletcher MA, Ironson G, Kumar M, Lutgendorf S, Hayes A, **Klimas N**, Schneiderman N. Reductions in herpes simplex virus type 2 antibody titers after cognitive behavioral stress management and relationships with neuroendocrine function, relaxation skills, and social support in HIV-positive men. Psychosom Med. 2000 Nov-Dec;62(6):828-37.
  102. **Klimas N**. Pathogenesis of chronic fatigue syndrome and fibromyalgia. Growth Horm IGF Res. 1998 Apr;8 Suppl B:123-6.
  103. Antoni MH, Cruess S, Cruess DG, Kumar M, Lutgendorf S, Ironson G, Dettmer E, Williams J, **Klimas N**, Fletcher MA, Schneiderman N. Cognitive-behavioral stress management reduces distress and 24-hour urinary free cortisol output among symptomatic HIV-infected gay men. Ann Behav Med. 2000 Winter;22(1):29-37
  104. **Klimas N**, Wallace M. Toward optimal health: the experts discuss chronic fatigue syndrome: interview by Jodi Godfrey Meisler. J Womens Health Gend Based Med. 2000 Jun;9(5):477-82.
  105. Fletcher, MA, Maher, K, Patarca, R, **Klimas, N**. Comparative analysis of lymphocytes in lymph nodes and peripheral blood of patients with chronic fatigue syndrome. J Chronic Fatigue Syndrome. 7:65-75, 2000.
  106. **Klimas, N**, Patarca, R, Maher, K, Smith, M. and Fletcher, MA. Clinical and immunologic

- effects of autologous lymph node transplant in chronic fatigue syndrome. *J Chronic Fatigue Syndrome*, 8:39-55, 2001.
107. Cruess, S.E., **Klimas, N.**, Antoni, M.H., Helder L., Maher, K., Keller, R., and Fletcher, M.A. Immunologic status correlates with severity of physical symptoms and perceived illness burden in chronic fatigue syndrome patients. *J Chronic Fatigue Syndrome* 7(1):39-52, 2000.
  108. Maher K, **Klimas N**, Fletcher MA, Cohen V, Maggio CM, Triplett J, Valenzuela R, Dickinson G. Disease progression, adherence, and response to protease inhibitor therapy for HIV infection in an Urban Veterans Affairs Medical Center. *J Acquir Immune Defic Syndr*. 1999 Dec 1;22(4):358-63.
  109. Perna FM, LaPerriere A, **Klimas N**, Ironson G, Perry A, Pavone J, Goldstein, A, Majors P, Makemson D, Talutto C, Schneiderman N, Fletcher MA, Meijer, OG, Koppes L. Cardiopulmonary and CD4 cell changes in response to exercise training in early symptomatic HIV infection. *Med Sci Sports Exerc*. 1999 Jul;31(7):973-9.
  110. Malow RM, Baker SM, **Klimas N**, Antoni MH, Schneiderman N, Penedo FJ, Ziskind D, Page B, McMahon R, McPherson S. Adherence to complex combination antiretroviral therapies by HIV-positive drug abusers. *Psychiatr Serv*. 1998 Aug;49(8):1021-2, 1024.
  111. Bell IR, Patarca R, Baldwin CM, **Klimas NG**, Schwartz GE, Hardin EE. Serum neopterin and somatization in women with chemical intolerance, depressives, and normals. *Neuropsychobiology*. 1998;38(1):13-8
  112. Lutgendorf SK, Antoni MH, Ironson G, Starr K, Costello N, Zuckerman M, **Klimas N**, Fletcher MA, Schneiderman N. Changes in cognitive coping skills and social support during cognitive behavioral stress management intervention and distress outcomes in symptomatic human immunodeficiency virus (HIV)-seropositive gay men. *Psychosom Med*. 1998 Mar-Apr;60(2):204-14.
  113. Bell IR, Schwartz GE, Baldwin CM, Hardin EE, **Klimas NG**, Kline JP, Patarca, R, Song ZY. Individual differences in neural sensitization and the role of context in illness low-level environmental chemical exposures *Environ Health Perspect*. 1997 Mar;105 Suppl 2:457-66. Review.
  114. LaPerriere A, **Klimas N**, Fletcher MA, Perry A, Ironson G, Perna F, Schneiderman N. Change in CD4+ cell enumeration following aerobic exercise training in HIV-1 disease: possible mechanisms and practical applications. *Int J Sports Med*. 1997 Mar;18 Suppl 1:S56-61. Review.
  115. Ironson G, Wynings C, Schneiderman N, Baum A, Rodriguez M, Greenwood D, Benight C, Antoni M, LaPerriere A, Huang HS, **Klimas N**, Fletcher MA. Posttraumatic stress symptoms, intrusive thoughts, loss, and immune function after Hurricane Andrew. *Psychosom Med*. 1997 Mar-Apr;59(2):128-41.
  116. Lutgendorf SK, Antoni MH, Ironson G, **Klimas N**, Kumar M, Starr K, McCabe P, Cleven K, Fletcher MA, Schneiderman N. Cognitive-behavioral stress management decreases dysphoric mood and herpes simplex virus-type 2 antibody titers in symptomatic HIV-seropositive gay men. *J Consult Clin Psychol*. 1997 Feb;65(1):31-43.
  117. Starr, K.R., Antoni, M., Hurwitz, B.E., Rodriguez, M.R., Ironson, G., Fletcher, M.A., Kumar, M., M., Patarca, R., Lutgendorf, S., Quillian, R.E., **Klimas, N.** and Schneiderman, N. Patterns of Immune, neuroendocrine and cardiovascular stress Responses in asymptomatic human immunodeficiency virus seropositive and seronegative men. *Int. J. Behavioral Med*. 3:135-162, 1996.
  118. Patarca R, Sandler D, Maher K, Hutto C, Martin NL, **Klimas NG**, Scott GB, Fletcher MA. Immunological correlates of disease severity in pediatric slow progressors with human immunodeficiency virus type 1 infection. *AIDS Res Hum Retroviruses*. 1996 Jul

- 20;12(11):1063-8
119. Patarca, R., **Klimas, N.G.**, Sandler, D., Garcia, M.N. and Fletcher, M.A. Interindividual immune status variation patterns in patients with chronic fatigue syndrome: association with the tumor necrosis factor system and gender. *J Chronic Fatigue Syn.* 2:13-39, 1996.
  120. Page, B., Lai, S., Fletcher, M.A., Patarca, R., Smith, P., Lai, H.C. and **Klimas, N.G.** Predictors of survival in HIV-1 seropositive intravenous drug users. *Clin. Diag. Lab. Immunol.*, 3:51-60, 1996.
  121. Patarca, R., Sandler, d., Walling, J., **Klimas, N.G.** and Fletcher, M.A. Assessment of immune mediator expression levels in biological fluids and cells: a critical appraisal. *Crit. Rev. Oncogenesis.* 6:117-149, 1995
  122. Ironson, G., Wyings, C., Schneiderman, N., Baum, A., Rodriquez, M., Greenwood, D., Benight, C., Antoni, M., LaPerriere, A., Huang, H-S., **Klimas, N.G.**, and Fletcher, M.A. Post-traumatic stress symptoms, intrusive thoughts, loss and immune function after Hurricane Andrew. *Psychosomatic Med.* 59:128-141, 1997.
  123. Thompson KA, Strayer DR, Salvato PD, Thompson CE, **Klimas N**, MolaviA, Hamill AK, Zheng Z, Ventura D, Carter WA. Results of a double-blind placebo-controlled study of the double-stranded RNA drug polyI:polyC12U in the treatment of HIV infection. *Eur J Clin Microbiol Infect Dis.* 1996 Jul;15(7):580-7.
  124. Page JB, Lai S, Fletcher MA, Patarca R, Smith PC, Lai HC, **Klimas NG**. Predictors of survival in human immunodeficiency virus type 1-seropositive intravenous drug users. *Clin Diagn Lab Immunol.* 1996 Jan;3(1):51-60.
  125. Lutgendorf SK, Antoni MH, Ironson G, Fletcher MA, Penedo F, Baum A, Schneiderman N, **Klimas N**. Physical symptoms of chronic fatigue syndrome are exacerbated by the stress of Hurricane Andrew. *Psychosom Med.* 1995 Jul-Aug;57(4):310-23.
  126. **Klimas, N.G.** and Fletcher, M.A. Chronic fatigue syndrome. *Curr. Opin. Inf. Dis.* 8:145-148, 1995.
  127. **Klimas, N.G.**, Patarca, R., Maher, K., Smith, M., Jin, X., Huang, H., Walling, J., Gamber, C. and Fletcher, M.A., *Clin. Immuno. Newsletter.* 14:85-89, 1994.
  128. Patarca, R., **Klimas, N.G.**, Garcia, M.N., Walters, M.J., Dombroski, D., Pons, H. and Fletcher, M.A. Dysregulated expression of soluble immune mediator receptors in a subset of patients with chronic fatigue syndrome: cross-sectional categorization of patients by immune status. *J. Chronic Fatigue Syn.*, 1:81-96, 1995.
  129. Flores MR, Sridhar KS, Thurer RJ, Saldana M, Raub WA Jr, Klimas NG. Lung cancer in patients with human immunodeficiency virus infection. *Am J Clin Oncol.* 1995 Feb;18(1):59-66.
  130. Patarca R, **Klimas NG**, Walling J, Sandler D, Friedlander A, Jin XQ, Garcia, MN, Fletcher MA. Adoptive CD8+ T-cell immunotherapy of AIDS patients with Kaposi's sarcoma. *Crit Rev Oncog.* 1995;6(3-6):179-234. Review.
  131. Patarca, R., **Klimas, N.G.**, Walling, J., Mayer, V., Baum, M., Yue, X., Garcia, M., Pons, H., Page, B.J., Lai, S., and Fletcher, M.A. CD8 T cell immunotherapy in AIDS: Rationale and lessons learned at the cellular and molecular biology level. *Clin. Immuno. Newsletter.* 14:89-95, 1994.
  132. **Klimas, N.G.**, Patarca, R., Maher, K., Smith, M., Jin, X., Huang, H., Walling, J., Gamber, C. and Fletcher, M.A., *Clin. Immuno. Newsletter.* 14:85-89, 1994.
  133. Patarca, R., **Klimas, N.G.**, Garcia, M.N., Walters, M.J., Dombroski, D., Pons, H. and Fletcher, M.A. Dysregulated expression of soluble immune mediator receptors in a subset of patients with chronic fatigue syndrome: cross-sectional categorization of patients by immune status. *J. Chronic Fatigue Syn.*, 1:81-96, 1995.
  134. LaPerriere A, Antoni MH, Ironson G, Perry A, McCabe P, Klimas N, Helder L,

- Schneiderman N, Fletcher MA. Effects of aerobic exercise training on lymphocyte subpopulations. *Int J Sports Med.* 1994 Oct;15 Suppl 3:S127-30.
135. Lutgendorf, S., **Klimas, N.G.**, Antoni, M., Brinkman, A., Patarca, R. and Fletcher, M.A. Relationships of cognitive difficulties to immune markers. Depression and illness burden in chronic fatigue syndrome. *J Chronic Fatigue syndrome*, 1:23-42, 1995
  136. Von Roenn JH, Armstrong D, Kotler DP, Cohn DL, **Klimas NG**, Tchekmedyian NS, Cone L, Brennan PJ, Weitzman SA. Megestrol acetate in patients with AIDS-related cachexia. *Ann Intern Med.* 1994 Sep 15;121(6):393-9
  137. **Klimas N**, Patarca R, Walling J, Garcia R, Mayer V, Moody D, Okarma T, Fletcher MA. Clinical and immunological changes in AIDS patients following adoptive therapy with activated autologous CD8 T cells and interleukin-2 infusion AIDS. 1994 Aug;8(8):1073-81.
  138. Gordin FM, Hartigan PM, **Klimas NG**, Zolla-Pazner SB, Simberkoff MS, Hamilton JD. Delayed-type hypersensitivity skin tests are an independent predictor of immunodeficiency virus disease progression. Department of Veterans Affairs Cooperative Study Group. *J Infect Dis.* 1994 Apr;169(4):893-7.
  139. LaPerriere A, Ironson G, Antoni MH, Schneiderman N, **Klimas N**, Fletcher MA. Exercise and psychoneuroimmunology. *Med Sci Sports Exerc.* 1994 Feb;26(2):182-90. Review.
  140. Antoni MH, Brickman A, Lutgendorf S, **Klimas N**, Imia-Fins A, Ironson G, Quillian R, Miguez MJ, van Riel F, Morgan R, et al. Psychosocial correlates of illness burden in chronic fatigue syndrome. *Clin Infect Dis.* 1994 Jan;18 Suppl 1:S73-8.
  141. **Klimas N**, Patarca R, Maher K, Smith M, Jin XQ, Huang HS, Walling J, Gamber C, and Fletcher MA, Immunomodulation with Autologous, Ex Vivo Manipulated Cytotoxic T Lymphocytes in HIV-1 Disease Clinical Immunology Newsletter, October 1994.
  142. Keller RH, Lane JL, **Klimas N**, Reiter WM, Fletcher MA, van Riel F, Morgan R. Association between HLA class II antigens and the chronic fatigue immune dysfunction Clin Infect Dis. 1994 Jan;18 Suppl 1:S154-6
  143. Patarca R, **Klimas NG**, Lutgendorf S, Antoni M, Fletcher MA. Dysregulated expression of tumor necrosis factor in chronic fatigue syndrome: interrelations with cellular sources and patterns of soluble immune mediator expression Clin Infect Dis. 1994 Jan;18 Suppl 1:S147-53.
  144. Dickinson GM, Morhart RE, **Klimas NG**, Bandea CI, Laracuenta JM, Bisno AL. Absence of HIV transmission from an infected dentist to his patients. An epidemiologic and DNA sequence analysis. *JAMA.* 1993 Apr 14;269(14):1802-6.
  145. Klimas NG, Page JB, Patarca R, Chitwood D, Morgan R, Fletcher MA. Effects of retroviral infections on immune function in African-American intravenous drug users. *AIDS.* 1993 Mar;7(3):331-5.
  146. Fletcher MA, **Klimas NG**, Morgan RO. Immune function and drug treatment in anti-retrovirus negative intravenous drug users. *Adv Exp Med Biol.* 1993;335:241-6
  147. Schneiderman N, Antoni MH, Fletcher MA, Ironson G, **Klimas N**, Kumar M, LaPerriere A. Stress, endocrine responses, immunity and HIV-1 spectrum disease. *Adv Exp Med Biol.* 1993;335:225-34.
  148. Goodnick PJ, Sandoval R, Brickman A, **Klimas NG**. Bupropion treatment of fluoxetine-resistant chronic fatigue syndrome. *Biol Psychiatry.* 1992 Nov 1;32(9):834-8.
  149. Goodkin K, Blaney NT, Feaster D, Fletcher MA, Baum MK, Mantero-Atienza E, **Klimas NG**, Millon C, Szapocznik J, Eisdorfer C. Active coping style is associated with natural killer cell cytotoxicity in asymptomatic HIV-1 seropositive homosexual men. *J Psychosom Res.* 1992 Oct;36(7):635-50.

150. Esterling BA, Antoni MH, Schneiderman N, Carver CS, LaPerriere A, Ironson G, **Klimas NG**, Fletcher MA. Psychosocial modulation of antibody to Epstein-Barr viral capsid antigen human herpesvirus type-6 in HIV-1-infected and at-risk gay men. *Psychosom Med.* 1992 May-Jun;54(3):354-71.
151. **Klimas NG** Clinical impact of adoptive therapy with purified CD8 cells in HIV *Semin Hematol.* 1992 Apr;29(2 Suppl 1):40-3; discussion 43-4.
152. **Klimas NG**, Patarca R, Perez G, Garcia-Morales R, Schultz D, Schabel J, Fletcher MA. Case report: distinctive immune abnormalities in a patient with procainamide-induced lupus and serositis. *Am J Med Sci.* 1992 Feb;303(2):99-104.
153. Patarca R, Perez G, Gonzalez A, Garcia-Morales RO, Gamble R, **Klimas N**, Fletcher MA. Comprehensive evaluation of acute immunological changes induced by cuprophane and polysulfone membranes in a patient on chronic hemodialysis. *Am J Nephrol.* 1992;12(4):274-8.
154. Antoni MH, Baggett L, Ironson G, LaPerriere A, August S, **Klimas N**, Schneiderman N, Fletcher MA. Cognitive-behavioral stress management intervention buffers distress responses and immunologic changes following notification of HIV-1 seropositivity. *J Consult Clin Psychol.* 1991 Dec;59(6):906-15.
155. Stitt FW, Lu Y, Dickinson GM, Klimas NG. Automated severity classification of AIDS hospitalizations. *Med Decis Making.* 1991 Oct-Dec;11(4 Suppl):S41-5.
156. **Klimas NG**, Caralis P, LaPerriere A, Antoni MH, Ironson G, Simoneau J, Schneiderman N, Fletcher MA. Immunologic function in a cohort of human immunodeficiency virus type1-seropositive and -negative healthy homosexual men. *J Clin Microbiol.* 1991 Jul;29(7):1413-21.
157. Li XM, Jeffers LJ, Reddy KR, de Medina M, Silva M, Villanueva S, **Klimas NG**, Esquenazi V, Schiff ER. Immunophenotyping of lymphocytes in liver tissue of patients with chronic liver diseases by flow cytometry. *Hepatology.* 1991 Jul;14(1):121-7.
158. LaPerriere A, Fletcher MA, Antoni MH, Klimas NG, Ironson G, Schneiderman N. Aerobic exercise training in an AIDS risk group. *Int J Sports Med.* 1991 Jun;12 Suppl 1:S53-7.
159. Antoni MH, Schneiderman N, **Klimas N**, LaPerriere A, Ironson G, Fletcher MA. Disparities in psychological, neuroendocrine, and immunologic patterns in asymptomatic HIV-1 seropositive and seronegative gay men. *Biol Psychiatry.* 1991 May 15;29(10):1023-41.
160. **Klimas NG**, Blaney NT, Morgan RO, Chitwood D, Milles K, Lee H, Fletcher MA. Immune function and anti-HTLV-I/II status in anti-HIV-1-negative intravenous drug users receiving methadone. *Am J Med.* 1991 Feb;90(2):163-70.
161. Antoni MH, August S, LaPerriere A, Baggett HL, **Klimas N**, Ironson G, Schneiderman N, Fletcher MA. Psychological and neuroendocrine measures related to functional immune changes in anticipation of HIV-1 serostatus notification. *Psychosom Med.* 1990 Sep-Oct;52(5):496-510.
162. LaPerriere AR, Antoni MH, Schneiderman N, Ironson G, **Klimas N**, Caralis P, Fletcher MA. Exercise intervention attenuates emotional distress and natural killer cell decrements following notification of positive serologic status for HIV-1. *Biofeedback Self Regul.* 1990 Sep;15(3):229-42.
163. Page JB, Lai SH, Chitwood DD, **Klimas NG**, Smith PC, Fletcher MA. HTLV-I/II seropositivity and death from AIDS among HIV-1 seropositive intravenous drug users. *Lancet.* 1990 Jun 16;335(8703):1439-41.
164. **Klimas NG**, Salvato FR, Morgan R, Fletcher MA. Immunologic abnormalities in chronic fatigue syndrome. *J Clin Microbiol.* 1990 Jun;28(6):1403-10.

165. Ironson G, LaPerriere A, Antoni M, O'Hearn P, Schneiderman N, **Klimas N**, Fletcher MA. Changes in immune and psychological measures as a function of anticipation and reaction to news of HIV-1 antibody status. *Psychosom Med*. 1990 May-Jun;52(3):247-70.
166. Pflugfelder SC, Tseng SC, Pepose JS, Fletcher MA, **Klimas N**, Feuer W. Epstein-Barr virus infection and immunologic dysfunction in patients with aqueous tear deficiency. *Ophthalmology*. 1990 Mar;97(3):313
167. **Klimas NG**, Morgan R, Blaney NT, Chitwood D, Page JB, Milles K, Fletcher MA. Alcohol and immune function in HIV-1 seronegative, HTLV-I/II seronegative and positive men on methadone. *Prog Clin Biol Res*. 1990;325:103-110
168. Linn BS, Linn MW, **Klimas NG**. Effects of psychophysical stress on surgical outcome. *Psychosom Med*. 1988 May-Jun;50(3):230-44.
169. Linn BS, Robinson DS, **Klimas NG**. Effects of age and nutritional status on surgical outcomes in head and neck cancer , *Ann Surg*. 1988 Mar;207(3):267-73.
170. Fischl MA, Dickinson GM, Scott GB, Klimas N, Fletcher MA, Parks W. Evaluation of heterosexual partners, children, and household contacts of adults with AIDS. *JAMA*. 1987 Feb 6;257(5):640-4.
171. Fletcher MA, Baron GC, Ashman MR, Fischl MA, **Klimas NG**. Use of whole blood methods in assessment of immune parameters in immunodeficiency states. *Diagn Clin Immunol*. 1987;5(2):69-81.
172. Scott GB, Fischl MA, **Klimas N**, Fletcher MA, Dickinson GM, Levine RS, Parks WP. Mothers of infants with the acquired immunodeficiency syndrome. Evidence for both symptomatic and asymptomatic carriers *JAMA*. 1985 Jan 18;253(3):363-6.
173. Baron GC, **Klimas NG**, Fischl MA, Fletcher MA. Decreased natural cell-mediated cytotoxicity per effector cell in acquired immunodeficiency syndrome. *Diagn Immunol*. 1985;3(4):197-204.
174. Fletcher MA, **Klimas NG**, Latif ZA, Caldwell KE. Serodiagnosis of infectious mononucleosis with a bovine erythrocyte glycoprotein. *J Clin Microbiol*. 1983 Sep;18(3):495-9.
175. **Klimas NG**, Caldwell KE, Whitney PL, Fletcher MA. Comparison of receptor properties of erythrocyte membrane glycoproteins. *Dev Comp Immunol*. 1982 Fall;6(4):765-74.
176. Krieg RE, **Klimas NG**, Attanasio R. Absence of an antibiotic effect of *Mycobacterium ulcerans*. *Int J Lepr Other Mycobact Dis*. 1975 Jul-Sep;43(3):265-6.

#### Articles in popular press:

Klimas NG Expert on Chronic Fatigue Syndrome for New York Times November 2009 – present host of the NY Times CFS focus blog.

Klimas, NG “Could a Virus be the Cause of Chronic Fatigue Syndrome?” *MS Magazine* January 2010

Klimas, NG. “Wake-Up Call. Hopeful new research shows that chronic fatigue syndrome may have a genetic basis”. *Ms. Magazine*, summer issue, 2006.

#### Invited Lectures (last 10 years)

Gender differences in Gulf War Illness: VA GWI Research advisory committee, Jan 5 2014

Research advances in ME/CFS Patient conference, NYU, NYC November 15, 2013

Treating Chronic Fatigue Syndrome/ ME and Gulf War Illness, Pri-Med Conference 2012 Miami, FL

Grand Rounds lecture, Endocrine issues in CFS/ME and GWI University of Miami Medical School October 2011

“What's new? Pathogenesis and Treatment 2011” IACFS/ME 10th International Conference, Ottawa, Canada September 19, 2011

Difficult Case Presentations Chair and panelist, IACFS/ME 10th International Conference, Ottawa, Canada September 19, 2011

Death and Dying, Physician/Patient presentation FIU School of Medicine, March 2011, Miami FL

Immune mechanisms of autoimmune diseases: pathogens, self, and chronic disease. FIU College of Medicine, March 2011

“Gene Expression change in exercise challenge in CFS/ME and GWI”, Opening lecture International Science Symposium On Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome (ME/CFS) BOND UNIVERSITY Queensland, Australia December 3 and 4 2010.

8 lecture tour, New Zealand November 2010: Research advances and clinical management of CFS/ME Nov 19 – 30, 2010, Dunedin College of Medicine, and 7 other sites.

Immunology and Biomarker Discovery in ME/CFS. INVEST in ME Science International Science Symposium London, England June 8 2010

Advances in our Understanding of Chronic Fatigue Syndrome, Pri-Med conference Ft Lauderdale Florida Feb 2010

Treatment based on pathogenesis – advances in our understanding of CFS, Fatigue Sciences Conference Calgary Canada Sept 2009

Keynote address (opening) “Immunology of Fatiguing Disorders” 3<sup>rd</sup> International Conference on Fatigue Science, Okinawa, Japan September 3<sup>rd</sup>, 2008

Keynote Address “Research Advances in CFS and ME” Canadian Conference on Fatigue and Illness, Calgary, Alberta Nov 12, 2008

“Biomarker Discovery in CFS” 8<sup>th</sup> annual TMJ Conference Rockville, MD, May 12, 2008

"Research Advances in CFS/ME" Invited lecture Western Pharmacologic Association Kona, Hawaii Jan 29, 2008

Keynote address: Understanding the interactions of the Immune system and the brain in CFS; International CFS/ME Clinical Conference, Oslo, Norway October 8, 2007

Evidence Based Treatment Approaches in CFS/ME; International CFS/ME Clinical Conference, Oslo, Norway October 8, 2007

Advances in our understanding of the immunology of CFS; Keynote 2<sup>nd</sup> International Conference on ME/CFS Biomedical Research, May 25, 2007 Edinburgh, Scotland.

Diagnosis and Management of CFS, Feb 23, 2007 PRIMCARE conference Ft Lauderdale FL, Research Updates, ME/CFS February, 2007, Madrid and Barcelona, Spain, Universad de Catalonia, series of talks to clinicians and patients “

Presidential Address, "New Directions in CFS/ME Research" IACFS/ME 8<sup>th</sup> annual International Research and Clinical meeting, Ft. Lauderdale, FL January 12, 2007.

The Diagnosis and Management of ME/CFS, a series of 10 talks to professionals and patients, across the country September, 2006, New Zealand

The Immunology and Genomics of Gulf War Illness – August 14, 2006 GWI Research Advisory Council, Washington, DC

Research Methodology in Fatiguing Illnesses Keynote Address Aviano, Italy: 1st International Meeting on Chronic Fatigue Syndrome and Cancer-related Fatigue May 5th 2006

Chronic Fatigue Syndrome: From Genomics to Treatment: Keynote Address, Connecticut ME Association Regional Conference, April 30, 2006 Hartford CT

CFS In the Veteran Population: Best Practices in the Continuum of Care: Management of Infectious Disease Little Rock AR. April 26, 2006

Clinical Management of CFS - PANDORA Conference, West Palm Beach, FL Oct 27, 2005

Research Advances in CFS – Keynote Address , OFFER Regional Conference, Salt Lake City ,Utah 4/16/05

Impact of Research Advances on Clinical Management of CFS – Keynote, OFFER Patient Conference, Salt Lake City, Utah 4/16/05

Research Advances in CFS – Keynote Address , CFIDS Asso Regional Conference, Charlotte, NC Nov 13, 2004

Gene Array Technology in CFS – the C<sup>3</sup> Computational Challenge, Cold Spring Harbor, Oct 2005

Immunomodulatory therapies – a review, South Florida Allergy Journal Club, 11/04

CFS – advancing knowledge impact on management, Keynote, AACFS Intl Clinical Conference, Madison Wisconsin 10/04

CFS Pathogenesis Keynote address, Specialization Course on Fibromyalgia and Chronic Fatigue Syndrome International University of Catalonia Barcelona, Spain May 29, 2004.

Honorary degree awarded.

Management of CFS Keynote Address, PANDORA Providers and Patient Conference, Ft Lauderdale FL May 11, 2004

The Diagnosis and Management of CFS NMA 2003 Annual Convention and Scientific Assembly, Philadelphia, August 2003

Immune Methodologic Issues, invited speaker NIH CFS Methodology Workshop June 2003, Bethesda, MD

CFS and Fibromyalgia – Diagnosis and Management NPACE, May 2003 Orlando FL

CFS: What we know, what we need to know, and how to get there. New Jersey Medical Association, New Brunswick. May 2003

CFS: What we know, what we need to know, and how to get there., Regional Primary Care Conference Salt Lake City May 2003

CFS – Somatic or Physical? A Debate, Intl Behavioral Medicine Asso, Helsinki, Finland August 2002

Instruments and Design of an Empiric Case Definition Study, CDC CFS Case Definition Workshop, Calloway Gardens, May 2002

Diagnosis and Management of CFS, National American Medical Women's Association Conference, San Antonio, TX Jan 2002

Inclusion and Exclusion Criteria, CDC CFS Case Definition Workshop, Calloway Gardens, May 2001

Immunology of Chronic Fatigue Syndrome, State of the Science Meeting, NIH, October 2000

Current Understanding of CFS Pathogenesis, NIH/CFS Research Priorities Series – Autonomic Dysfunction Conference, October 2000; Neuroendocrine Abnormalities, February 2001; Immunology Conference October 2001

Immune Restoration Post Antiretroviral Therapy, Guest lecturer, Hollywood Memorial Hospital; Baptist Hospital; Mercy Hospital; Broward General Hospital; VAMC, Nashville Tennessee; Mobile, Alabama; Key West Florida; Jan – April 2005

Global Impact of HIV on Women, National Organization for Women's Global Women's Health Conference, Washington DC June 2001

Housestaff/Medical Student lectures (given regularly throughout all academic years): Anaphylaxis; Asthma; Immune Modulatory Therapies; Global Impact of HIV; Immune restoration in HIV infection; Hepatitis C; HIV Co-infection; Death and Dying – the Clinician's role; Chronic Fatigue Syndrome; Gulf War Syndrome; Psychoneuroimmunology; Stress and Disease.

Graduate Studies Lectures: Multidisciplinary Clinical Research; Immunology 101; Psychoneuroimmunology and disease; Pathogenesis of HIV/AIDS; Chronic Fatigue Syndrome

Undergraduate Lectures: Careers in clinical research, Death and Dying

### Other Works and Publications

#### Reports

1. IOM (Institute of Medicine). 2015. Beyond myalgic encephalomyelitis/chronic fatigue syndrome: Redefining an illness. Washington, DC: The National Academies Press.

#### Letters to the Editor

1. Klimas, N.G. and Fletcher, M.A. Chronic Fatigue Syndrome. JAMA, 1991.
2. Klimas, N.G., Blaney, N., Morgan, R. and Fletcher, M.A. Methadone and Immune Function, Amer. J. Med. 92:114-115, 1991.

#### Editorials

Klimas, N.G. and Patarca, R. The birth of a journal. J. Chronic Fatigue Syndrome. 1:1-2, 1995.

### Abstracts and Presentations at National and International Meetings

1. **Klimas, N.G.**, Lo, H., Brunschwig, J.P., Caldwell, K.E., Latif, Z.A., and Fletcher, M.A. Biochemical Morphological and Receptor Properties of Erythrocyte Glycoproteins, Soc. Complex Carbohydrates, 1980.
2. **Klimas, N.G.**, Caldwell, K.E., Latif, Z.A. and Fletcher, M.A.: A Purified Erythrocyte Bovine Glycoprotein Useful In The Serodiagnosis of Infectious Mononucleosis. Clin. Res. 29 No. 5, 1981.
3. Scott, G.B., Parks, W.P., Fischl, M., Fletcher, M.A. and **Klimas, N.G.**: Acquired Immunodeficiency Syndrome in Haitians: A Household Approach. Presented to the Cold Spring Harbor Special AIDS Meeting. Cold Spring Harbor, New York, September 17, 1983.
4. **Klimas, NG.** and Fletcher, M.A: Elevation of "Forssman-like" Antibody in AIDS. Clin. Res. 42:350, 1984.
5. Fischl, M.A., **Klimas, N. G.**, Wang, G., Georgiades, J.A., Spira, T. and Fletcher, M.A. Human -lymphoblastoid Interferon in the Treatment of Kaposi's Sarcoma, Internatl. Interferon Conf., Frankfurt, 1984.
6. Baron, G.A., **Klimas, N.G.**, Fischl, M. and Fletcher, M.A.: Decreased Natural Cell Mediated Cytotoxicity (NCC) to Cell-Line K562 per Leu 11 Positive Cells in Acquired

Immunodeficiency Syndrome (AIDS). Fed. Proc. 44:593,1985.

7. Fischl, M.A., Dickinson, G., Scott, G., **Klimas, N.G.**, Fletcher, M.A. and Parks, W.: Evaluation of Household Contacts of Adult Patients with the Acquired Immunodeficiency Syndrome, 1st Internatl. Conf. on AIDS, Atlanta, 1985.
8. Fischl, M.A., Ahn, Y.S., **Klimas, N.G.**, Harrington, W.J. and Fletcher, M.A.: Use of Danazol in Autoimmune Thrombocytopenia Associated with the Acquired Immunodeficiency Syndrome. 1st Internatl. Conf. on AIDS, Atlanta, 1985.
9. Baron, G.A., **Klimas, N.G.**, Fischl, M.A. and Fletcher, M.A.: Natural Cell Mediated Cytotoxicity (NCC) to Cell Line K562 per Leu 11 Positive Cell is Decreased in the Acquired Immunodeficiency Syndrome. 1st Internatl. Conf. on AIDS, Atlanta, 1985.
10. **Klimas, N.G.**, Torres, O., Silveira, G., Fischl, M.A. and Fletcher, M.A.: Humoral Immune Abnormalities in Two South Florida Acquired Immunodeficiency Syndrome Risk Groups. 1st Internatl. Conf. on AIDS, Atlanta, 1985.
11. Scott, G.B., Fischl, M.A., **Klimas, N.G.**, Fletcher, M.A., Dickinson, G. and Parks, W.: Mothers of Infants with the Acquired Immunodeficiency Syndrome (AIDS : Outcome of Subsequent Pregnancies. 1st Internatl. Conf. on AIDS, Atlanta, 1985.
12. **Klimas, N.G.**, Lian, E., Fischl, M.A. and Fletcher, M.A.: Apparent False Positive ELISA Tests for HTLV/LAV Antibody (AB) and Polyclonal B cell Activation (PCBA) in Acquired Immunodeficiency Syndrome (AIDS) Risk Groups. 2nd Internatl. Conf. on AIDS, Paris, 1986.
13. Fischl, M.A., Dickinson, G.M., Scott, G.B., **Klimas, N.G.**, Fletcher M.A. and Parks, W.: Heterosexual and Household Transmission of the Human T-lymphotropic Virus Type III. 2nd Internatl. Conf. on AIDS, Paris, 1986.
14. **Klimas, N.G.**, Lubs, M. and Fletcher, M.A. Complement (C') Activation and Immune Complex (IC) Formation in Asymptomatic Women with Multiple Miscarriages. 6th International Congress of Immunology, Toronto, 1986.
15. Fletcher, M.A. and **Klimas, N.G.** Polyclonal B cell activation (PBA) and the Incidence of Antibody to HTLVIII/LAV (AB) in Groups at Risk for Acquired Immunodeficiency Syndrome (AIDS). 6th International Congress of Immunology, Toronto, 1986.
16. Baron, G.C., **Klimas, N.G.**, Ashman, M.A., Fischl, M.A. and Fletcher, M.A.: Immune Parameters of Patients with AIDS/Kaposi's Sarcoma During Human Lymphoblastoid Interferon Treatment. 3rd International Congress on AIDS, Washington, D.C., 1987.
17. Dodds, S., Fletcher, M.A., P.O'Hearn, Cole, P., Caralis, P., **Klimas, N.G.**, et al,: Inter- and Intra- Personal Factors in the Recruitment and Retention of Subjects For an AIDS Intervention Research Study. 3rd International Congress on AIDS, Washington, D.C., 1987.
18. Baron, G.C., Bouguignon, L.Y.W., **Klimas, N.G.**, Fischl, M.A., Scott, G.B. and Fletcher, M.A.: Reduced Lymphocyte Cap Formation in Patients with AIDS and ARC. 3rd International Congress on AIDS, Washington, D.C., 1987.

19. Tarsis, S.L., **Klimas, N.G.**, Baron, G.S., Ashman, M.A. and Fletcher, M.A.: Decreased Natural Killer Cell Activity and Changes in T Lymphocyte Surface Markers in Patients with Chronic Epstein Barr Virus (EBV) Infection. 5th Annual Medical Laboratory Immunology Conference, Williamsburg, VA, 1987.
20. Eisdorfer, C., Szapocznik, G. Scott, Fletcher, M.A., **Klimas, N.G.**, Fordyce-Baum, M. The Biopsychosocial Research Center on AIDS: A Multidisciplinary Approach to the Investigation of the AIDS Disease. 3rd International Congress on AIDS, Washington, D.C., 1987.
21. Fletcher, M.A., Caralis, P., Laperrier, A., Ironson, G., **Klimas, N.G.**, Perry, A., Ashman, M. and Schneiderman, N. Immune Function and Aerobic Training as a Function of Anti-HIV Status in Healthy Gay Males, 4th International Conference on AIDS, Stockholm, Sweden, June, 1988.
22. Fletcher, M.A., O'Hearn, P., Ingram, F., Ironson, G., Laperrier, A., **Klimas, N.G.** and Schneiderman, N. Anticipation and Reaction to Anti-HIV Test Results: Effect on Immune Function in an AIDS Risk Group. 4th International Conference on AIDS, June, 1988.
23. Fletcher, M.A., Ironson, G., Caralis, P., Laperrier, A., **Klimas, N.G.**, O'Hearn, P., Antoni, M. and Schneiderman, N. A Behavioral Intervention Study in Anti-HIV Positive and Negative Gay Men. Presented, American Psychological Society, August, 1988.
24. Laperrier, A., O'Hearn, P., Ironson, G., Caralis, P. Ingram, F., Perry, A., **Klimas, N.G.**, Schneiderman, N. and Fletcher, M.A. Exercise and Immune Function in Healthy HIV Antibody Negative and Positive Gay Males. 9th Annual Society of Behavioral Medicine. Boston, MA, 1988.
25. Baron, G.A., Ashman, M.A., Fischl, M.A., **Klimas, N.** and Fletcher, M.A. Immunomodulation of Patients with AIDS Related Complexes (ARC) During Therapy with Recombinant Interferon Gamma (IFNG). 4th International AIDS Conf., Stockholm, June, 1988.
26. **Klimas, N.G.**, Page, B., Chitwood, D., Ashman, M. and Fletcher, M.A. Immune Abnormalities in Street Intravenous Drug Users. 4th International AIDS Conf. Stockholm, 1988.
27. Blaney, N., **Klimas, N.G.**, Fletcher, M.A. and Morgan, R. Mood State, Social Support and Immune Function in HIV- and HIV+ IV Drug Abusers, an AIDS Risk Group. 4th International AIDS Conf., Stockholm, June, 1988.
28. **Klimas, N.G.**, N. Blaney, Morgan, R., Ashman, M. and Fletcher, M.A. Abnormal Lymphocyte Subsets and Natural Killer Cell Function in Anti-HIV Negative Intravenous Drug Users on Methadone. 4th International AIDS Conf., Stockholm, June, 1988.
29. Fletcher, M.A. and **Klimas, N.G.** Immunology Measures in Chronic Fatigue Syndrome. NIH Workshop: Design Considerations in Studies of the Chronic Fatigue Syndrome. Pittsburgh, September, 1988.

30. **Klimas, N.G.** The Psychoimmunology of HIV Infection in IV Drug Users. Presented at the American Psychological Association, Atlanta, 1988.
31. Millon, C., Salvato, F., van Riel, F., Blaney, N., Fletcher, M.A. and **Klimas, N.G.** Psychosocial Characterization of Chronic Fatigue Syndrome/Epstein-Barr Virus Patients. *J. Exp. Clin. Can. Res.* 7, #3, supplement:87, 1988.
32. Van Riel, F., Mantero-Atienza, E. Salvato, F., Beach, R., Fletcher, M.A., **Klimas, N.G.** and Fordyce-Baum, M. Nutritional Status of Chronic Fatigue Syndrome (CFS)/ Epstein-Barr Virus (EBV) Patients. *J. Clin. Can. Res.* 7, #3, supplement: 88, 1988.
33. Salvato, F., Fletcher, M.A., Ashman, M. and **Klimas, N.G.** Immune Dysfunction Among Chronic Fatigue Syndrome (CFS) Patients with Clear Evidence for Epstein-Barr Virus (EBV) Reactivation. *J. Clin. Can. Res.* 7, #3, supplement: 89, 1988.
34. Laperriere, A., Ironson, G., **Klimas, N.**, Caralis, P., Antoni, M., Fletcher, M.A. and Schneiderman, N., Aerobic Exercise and Immune Function in an AIDS Risk Group. presented at a symposium at the Society of Behavioral Medicine, San Francisco, CA, 1989.
35. Laperriere, A. Ironson, G. ,O'Hearn, P., Caralis, P., Antoni, M., Ingram, F., **Klimas, N.**, Baggett, L., Schneiderman, N. and Fletcher, M.A. Aerobic Exercise Training as a Buffer of Anxiety and Depression in HIV Infected Individuals. *Soc. Behav. Med.*, Boston, 1989.
36. **Klimas, N.G.**, Blaney, N., Morgan, R., Simoneau, J. and Fletcher, M.A. Immunologic Abnormalities in Anti-HIV-1 negative (-) and positive (+) IV drug Abusers (IVDA) on Methadone. V Internatl. Conf on AIDS. Montreal, 1989.
37. **Klimas, N.G.**, Berger, J., LaVoie, L. and Fletcher, M.A. Immunophenotyping in Asymptomatic and Neurologically Symptomatic Anti-HIV-1 Positive and Anti-HTLV-1 Negative Men. V Internatl. Conf on AIDS, Montreal, 1989.
38. **Klimas, N.G.**, Berger, J., Spector, S., Friedman, H., Ashman, M. and Fletcher, M.A. Cytokines and Immunoglobulins (Ig) in Cerebrospinal Fluid (CSF) of Anti-HIV-1 Positive, Anti-HTLV-1 Negative Asymptomatic Men. V Internatl. Cong. on AIDS, Montreal, 1989.
39. Fletcher, M.A., Ironson, G., Laperrier, A., Simoneau, J., **Klimas, N.G.** and Schneiderman, N. Immunological and Psychological Predictors of Disease Progression in Gay males at Risk for AIDS. V Internatl. Cong. on AIDS, Montreal, 1989.
40. Fletcher, M.A., **Klimas, N.G.**, Ironson, G., Laperriere, A. and Schneiderman, N. Immunologic Abnormalities of Seropositive and Seronegative Men. V Internatl. Cong. on AIDS, Montreal, 1989.
41. Berger, J., McCarthy, M., Fletcher, M.A., **Klimas, N.**, Lo, E. and Pall, L. Serological and Cerebrospinal Fluid Parameters Related to Syphilis in HIV Asymptomatic Seropositives. V Internatl. Cong. on AIDS, Montreal, 1989.
42. Berger, J., McCarthy, M., Resnick, L., Fletcher, M.A., **Klimas, N.G.**, LaVoie, L. and Pall, L. History of Syphilis as a Cofactor for the Expression of HIV Infection. V Internatl. Cong. on

AIDS, Montreal, 1989.

43. Berger, J., McCarthy, M., Resnick, L., Fletcher, M.A., **Klimas, N. G.**, Lo, E. and Pall, L. T4 Lymphocyte Counts and Presence of Abnormalities on Neurological Examination in Asymptomatic HIV Seropositive Subjects. V Internatl. Cong. on AIDS, Montreal, 1989.
44. Berger, J., McCarthy, M., Levin, T., DiDonna, E., **Klimas, N.G.**, Resnick, L. and Fletcher, M.A., Neurological and Cognitive Correlates of T4 Lymphocyte Counts in Asymptomatic HIV Seropositive Adults. Neurological and Neuropsychological Complications of AIDS, Quebec City, 1989.
45. Fletcher, M.A., **Klimas, N.G.**, Morgan, R., Page, B., Chitwood, D., Blaney, N., Laperriere, A. and Schneiderman, N. Immune Function in AIDS Risk Groups: Effects of Infection with Retroviruses and Polydrug (Including Alcohol) Use. Alcohol and AIDS Network Conference, Tucson, 1989.
46. Fletcher, M.A., **Klimas, N.G.**, Salvato, F., Millon, C. and Ateinza-Mantero, E. Immunological Parameters of Chronic Fatigue Syndrome (CFS). VII Internatl. Cong of Immunology, Berlin, 1989.
47. **Klimas, N.G.**, Blaney, N., Morgan, R. and Fletcher, M.A. Immunologic Abnormalities in Human Immunodeficiency Virus-1 Negative (HIV-) IV Drug Abusers (IVDA) on Methadone. VII International Cong. of Immunology, Berlin, 1989.
48. **Klimas, N.G.** Chronic Fatigue Syndrome: A Psychoimmunologic Disease. Presented at the Annual Meeting- Academy of Behavioral Medicine Research, Lake Mohonk, NY, 1989.
49. Fletcher, M.A. and **Klimas, NG.** Immunologic Measurements in Psychoimmunology. Symposium on Psychoimmunology of AIDS. Amer. Psy. Assoc., New Orleans, 1989.
50. Fletcher, M.A., Freidman, A., Klimas, N.G., Spector, S., Schneiderman, N. and Freidman, H. Cytokines in the Psychoimmunology of AIDS. Amer. Soc. Microbiol. New Orleans, 1989.
51. **Klimas, N.G.** Epidemiology, Clinical Manifestations and Therapy of HIV-1 Infections. Symposia International Sobre SIDA-1990, Buenos Aires, Argentina, 1990.
52. **Klimas, N.G.** Chronic Fatigue Syndrome - Definition, Evaluation and Clinical Management. Seminario Sobre Psicoimmunologia. Buenos Aires, Argentina, 1990.
53. **Klimas, N.G.** Transmission, Clinical Manifestations and Treatment and Prevention of AIDS. I Jornadas Patagonicas de Infectologia, Universidad Nacional del Comahue, Neoquen, Argentina, 1990.
54. Pando, J. and **Klimas, N.G.** Clinical vs Necropsy Findings in an AIDS Population. Sixth International Conference on AIDS, San Fransisco, CA, 1990.
55. Fletcher, M.A., Antoni, M., **Klimas, N.G.**, Laperrier, A., Ironson, G. and Schneiderman, N. Psychoneurological Aspects of HIV-1 Serostatus Notification. Sixth International Conference on AIDS, San Fransisco, CA, 1990.

56. **Klimas, N.G.**, Berger, J., Stein, N., Gamber, C. and Fletcher, M.A., Lymphocyte Phenotypes in HIV-1 Associated Neurological Disease. Neurological and Neuropsychological Complications of AIDS, Monterey, CA, 1990.
57. Antoni, M.H., Baggett, H.L., August, S., LaPerriere, A., Ironson, G., **Klimas, N.G.**, Schneiderman, N. and Fletcher, M.A. Stress Management Intervention Buffers Distress Responses and Elevates Immunologic Markers Following Notification of HIV-1 Seropositivity. Presented at the 12th Annual Convention of the Society of Behavioral Medicine, Washington, D.C., 1991.
58. Fletcher, M.A., Page, J.B., Morgan, R. and **Klimas, N.G.** Street IVU: Immune function and HIV and HTLV infections. 4th Annl. Retrovirology Conf., Jamaica, 1991.
59. **Klimas, N.G.**, Lee, H., Fletcher, M.A. No Serologic Evidence for HTLV-I or II in Chronic Fatigue Syndrome. 4th Annl. Retrovirology Conf., Jamaica, 1991.
60. **Klimas, N.G.**, Ironson, G., Simoneau, J., Freidman, A., Antoni, M., Schneiderman, N. and Fletcher, M.A. Relationship of HIV-1 Disease Progression to Psychosocial Factors in Gay Men. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
61. Garcia-Morales, R.T., **Klimas, N.G.**, Walling, J., Patarca, R., Moody, D. and Fletcher, M.A. Phenotype of CD8 Lymphocytes from HIV-1 Infected Persons after Isolation and Ex-Vivo Expansion. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
62. **Klimas, N.G.**, Patarca, R., King, W., Gamble, R. and Fletcher, M.A. Cytokines in Chronic Fatigue Syndrome. Presented at the 3rd Networking Conf. on Psychoneuroimmunology, Columbus, OH, 1991.
63. Fletcher, M.A., Ironson, G., Hopper, D., Antoni, M., Kumar, M., LaPerriere, A., Klimas, N.G. and Schneiderman, N. Blunted In Vitro Response to Catecholamine in HIV-1 Seropositive Gay Men. Presented at the 3rd Networking Conf. on Psychoneuroimmunology, Columbus, OH, 1991.
64. Ironson, G., Simoneau, J., **Klimas, N.G.**, Antoni, M., LaPerriere, A., Schneiderman, N. and Fletcher, M.A. HIV-1 Disease Progression and Psychosocial Variables. Presented at the 3rd Networking Conf. on Psychoneuroimmunology, Columbus, OH, 1991.
65. Patarca, R., Guido, P., **Klimas, N.G.** and Fletcher, M.A. Cytokine Activation in Hemodialysis Patients. Submitted for Presentation at the Clin. Immunol. Soc., Crystal City, VA, 1991.
66. **Klimas, N.G.**, Patarca, R., and Fletcher, M.A. Cytokine and other Soluble Marker Abnormalities in Chronic Fatigue Syndrome. Submitted for Presentation at the Clin. Immunol. Soc., Crystal City, VA, 1991.
67. **Klimas, N.G.**, Fletcher, M.A., Walling, J., Patarca, R., Garcia-Morales, R., Moody, D. and OKarma, T. Phase 1 trial of adoptive therapy with purified CD8 cells in HIV infection. vol 2, pg. B161. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.

68. Fletcher, M.A., **Klimas, N.G.**, Walling, J., Patarca, R., Alberricin, C., Mayer, V., Gacia-Morales, R., Gamber, C., Moody, D. and OKarma, T. Adoptive therapy with purified CD8 cells in HIV infection. vol 2, pg B161. Presented at the 8th Internatl Conf. on AIDS, 1992.
69. Garcia-Morales, R. Patarca, R., Albarricin, C, **Klimas, N.G.**, Gamber, C., Berger, J. and Fletcher, M.A. Soluble immune mediator profiles in cerebrospinal fluids from HIV-1 infected individuals with different neuropathologies. vol 2, pg, 219. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.
70. Antoni, M., Esterling, B., Schneiderman, N., Laperrier, A., Ironson, G., **Klimas, N.**, and Fletcher, M.A. Behavioral interventions modulate IgG antibody titers to ECA-VCA and HHV-6 in HIV+ and HIV- gay men. vol 2, pg B223. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.
71. Fletcher, M.A., Morgan, R. and **Klimas, N.G.** Substance Abuse, NK Cells and Immune Function. Presented at the 2nd International Symposium on Drugs of Abuse, Immunity and AIDS, Tampa, FL, 1992.
72. Patarca, R., **Klimas, N.G.**, Lutgendorf, S., Albarracin, C., Garcia-Morales, R., van Reil, F., Antoni, M., and Fletcher, M.A. Changes in the expression patterns of soluble immune mediator in association with CD8+ T cell activation in CFS. Presented at the International Research Conf. on Chronic Fatigue and Immune Dysfunction Syndrome, Albany, N.Y., 1992.
73. Keller, R., van Reil. F., Maislis, J., Lane, J., Reiter, W., **Klimas, N.G.** and Fletcher, M.A. Correlation of DR4 and DQ1 with immunologic defects in CFS. Presented at the International Research Conf. on Chronic Fatigue and Immune Dysfunction Syndrome, Albany, N.Y., 1992.
74. Antoni, M., Brickman, A., Imia-Fins, A., **Klimas, N.**, Lutgendorf, S., Ironson, G., Quillan, R., Miquez, M.J., van Reil, F., Morgan, R., Patarca, R. and Fletcher, M.A. Cognitive appraisals, coping strategies predict CFS disturbances. Presented at the International Research Conf. on Chronic Fatigue and Immune Dysfunction Syndrome, Albany, N.Y., 1992.
75. **Klimas, N.G.** Autologous Cytotoxic T cell Activation, Expansion and Reinfusion with IL2-r in HIV Disease. Presented at Setiem Colloque Des "Cent Gardes": Retroviruses of Human AIDS and Related Animal Diseases, Pasteur Merieux Serums and Vaccines Foundation Marcel Meriuex, Marnes-la-Coquette, France, 1992.
76. Dickinson, G.M., Bisno, A.L., Morhart, R., **Klimas, N.G.**, Laracuente, J., Human Immunodeficiency virus (HIV) infection among patients of a dentist with AIDS. presented at the Annual Meeting of the Association of American Physicians, American Society for Clinical Investigation, and American Federation of Clinical Research. Baltimore, MD May 1-6, 1992.
77. **Klimas, N.G.**, Fletcher, M.A. Walling, J., Pardo, V., Okarma, T., Kremer, J., Response of Kaposi's Sarcoma (KS) to Autologous CD8 cells, Expanded and Activated Ex Vivo and Reinfused with IL-2. IXth Intl. Conf. on AIDS, Berlin, Abstract Book 1. p58, 1993.

78. Goodkin, K., Blaney, N., Feaster, D., **Klimas, N.**, Fletcher, M.A., and Baum, M. Psychosocial Variables Predict Long Term Changes in Psychological Distress and Laboratory Progression Markers. IXth Intl. Conf. on AIDS, Berlin, Abstract Book 2. p897, 1993.
79. **Klimas, N.G.** Clinical Use of Ex Vivo Expanded CD8 T Cells in AIDS. Intern. BioTechnology Expo. and Conf. (IBEX '93) San Francisco., 1993.
80. Fletcher, M.A., **Klimas, N.G.**, and Antoni, M. Immunologic Impact of Hurricane Andrew on Immune Markers in Individuals with HIV-1 Infection. Symposium on the Psychoneuroimmunology of Hurricane Andrew, American Psychology Association. Toronto, 1993.
81. Lutgendorf, S., **Klimas, N.**, Antoni, M., and Fletcher, M.A. Immunologic Impact of Hurricane Andrew on Immune Markers in Individuals with Chronic Fatigue Syndrome. Symposium on the Psychoneuroimmunology of Hurricane Andrew, American Psychology Association. Toronto, 1993.
82. Ironson, G., Antoni, M., Greenwood, D., **Klimas, N.**, Fletcher, M.A., Baum, A., and Schneiderman, N. Evaluation of psychosocial, immune and endocrine impact of Hurricane Andrew in a Community Sample. Symposium on the Psychoneuroimmunology of Hurricane Andrew, American Psychology Association. Toronto, 1993.
83. Harrington, W., Cacral, L., Patarca, R., Lai, S., Venet, T., **Klimas, N.**, Fletcher, M.A., and Byrnes, J. Baseline CD8 Counts as a Predictor of Survival in Patients with HIV-Associated Lymphoma Undergoing Chemotherapy. Amer. Soc Hematology, St. Louis, MO 1993.
84. Fletcher, M.A., Patarca, R., and **Klimas, N.G.**, Possibilities of Autologous CD8 Cell Therapy In HIV Disease. Pediatric Immunology Working Group. AIDS Clinical Trial Group Meeting, Washington, DC, 1993.
85. Lutgendorf, S., **Klimas, N.G.**, Antoni, M. and Fletcher, M.A. Cognitive Difficulties Correlate with Immune Function in Chronic Fatigue Syndrome, Psychosomatic Medicine Society, Atlanta, GA, 1993.
86. Lutgendorf, S. Antoni, M., Ironson, G., Starr, K., **Klimas, N.**, Kumar. M., Cleven, K., Peneodo, F., Schneiderman, N. and Fletcher, M.A. Impact of avoidant thoughts on immune functioning in symptomatic HIV positive men. Psychosomatic Medicine Society, Boston, Ma, 1994.
87. Lane, J.T., Uribe, M., **Klimas, N.G.**, Fletcher, M.A., Keller, R., Tomaka, F., Giannetti, B., Gamatos, P. and Reiter, W. Lymphocyte transfusions to patients with AIDS. Presented to American Association of Blood Banks. November, 1994.
88. Fletcher, M.A. and Klimas, N.G. Immunologic aspects of chronic fatigue syndrome. Presented at the American Psychosomatic Society, Boston, MA, 1994.
89. Lutgendorf, S., Antoni, M., Ironson, G., **Klimas, N.**, Kumar, M., Schneiderman, N. and Fletcher, M.A. Neuroendocrine and immune effects of a psychosocial intervention in

symptomatic HIV seropositive gay men. Presented at the PsychoNeuroImmunology Research Society, Key Biscayne, FL, 1994.

90. Patarca, R., Pons, H., Garcia, M., **Klimas, N.** and Fletcher, M.A. Cytokine patterns in chronic fatigue syndrome. Presented at the Chronic Fatigue Society, Research Meeting, Ft. Lauderdale, FL, 1994
91. Patarca, R., **Klimas, N.G.**, Walling, J., Yue, X.-S., Garcia, M., Pons, H. and Fletcher, M.A. CD8 T cell-associated cytokine gene expression programs in AIDS. Intrn. Society of Chemotherapy - Biologic Response Modifiers, Cancun, Mexico, Abstracted in J. Immunotherapy, 1995.
92. Patarca, R. **Klimas, N.G.**, Walling, J., Yue, X.-S., Garcia, M., Pons, H., Sandler, D., Friedlander, A. and Fletcher, M.A., CD8 T cell immunotherapy in AIDS: Lessons learned at the cellular and molecular biology levels. presented FASEB meeting Atlanta, GA, 1995.
93. Maher K, Asthana D, Patarca R, **Klimas NG**, and Fletcher MA. CD69 on CD4 and CD8 Cells From HIV-1 Infected Donors Clinical Applications of Cytometry. Charleston, SC, 1995.
94. Maher K, Patarca R, Hutto C, Scott GB, Martin N, **Klimas NG**, and Fletcher MA. Immunological Correlates Among Children With Perinatally-Acquired Human Immunodeficiency Type-1 Virus Infection Association of Medical Laboratory Immunologists, Vail, CO, 1995.
95. Maher K, **Klimas N**, Dickinson G, Triplett J, Maggio C, Cohen V, Valenzuela R, and Fletcher MA. The effect of Highly Active AntiRetroviral Therapy on Viral Load and the Immune System in Human Immunodeficiency Virus (HIV) Infection. NY State Wadsworth Conference on HIV Laboratory Testing. Albany, NY, 1997.
96. Maher, K, **Klimas, N**, Dickinson, G, Triplett, J, Maggio, C, Cohen, V, Valenzuela, R and Fletcher, MA. T-lymphocyte subsets and highly active anti-retroviral therapy (HAART) therapy of human immunodeficiency virus (HIV) infection, selected for oral presentation. Clinical Applications of Cytometry. Charleston, SC, 1997.
97. **Klimas, N.** Update on anti-retroviral therapy in HIV. SCIM, Vail Colo., 1997.
98. **Klimas, N.** Highly active anti-retroviral therapy: implications for adherence and immunomodulatory interventions. Academy for Behavioral Medicine Research, Cape Cod, 1998.
99. 99. McPherson, S., Malow, R., Penedo, F.J., Jones, D., Maggio, C., Triplett, J., **Klimas, N.**, Enhancing adherence to combination antiretroviral therapy in non-adherent HIV+ men. Presented at the annual meeting of the American Psychological Association, Boston, MA, 1999.
100. **Klimas, NG** - Immunology of CFS, Regional Behavioral Medicine Conference, Auckland New Zealand, Nov 2000
101. **Klimas, NG**, McPherson, S Adherence and Chronic Active Hepatitis C – what we have

learned from HIV, 25<sup>th</sup> Intl behavioral Medicine Society Conference, Brisbane, Australia Nov 2000

102. **Klimas, NG**, speaker. Immunology of CFS, State of the Science Meeting, NIH Workshop, Washington DC October 2000
103. **Klimas, NG**, speaker: Current understanding of the Pathogenesis of CFS –NIH/CFIDS Asso Workshop on Autonomic Dysfunction and CFS, February 2001, Washington DC
104. **Klimas, NG**, speaker: Methodologic Issues Seminar \_ NIH/CFIDS Workshop on Neuroendocrine Dysfunction and CFS, Nov 2001, Washington DC
105. **Klimas, NG**, speaker: Methodologic Issues in the Study of CFS – NIH/CFIDS Association Workshop on Immune Dysfunction and CFS, Feb 2002
106. **Klimas, NG**, speaker: Adherence to Therapy Seminar, 26<sup>th</sup> International Behavioral Medicine Society Conference, Helsinki, Finland, August 2002
107. **Klimas, NG**, debater participant: CFS – physical or somatic disorder? 26<sup>th</sup> International Behavioral Medicine Society Conference, Helsinki, Finland, August 2002
108. **Klimas, NG**, speaker : Methodologic Issues – Immunology of CFS; NIH State of the Science Meeting, Bethesda, MD, May 2003
109. **Klimas NG** and Turgeli, E Assessment Tools in CFS, AACFS Intl Conference Madison Wisconsin, October 2004
110. [Jeffrey Greeson, Maria Llabre, Nancy Klimas, Peter Lawrence, Alex Gonzalez, Pedro Martin, Neil Schneiderman, Barry Hurwitz](#) [Psychological Distress and HIV Disease Progression: Role of Natural Killer Cell Immunity](#); 2005 Annual Meeting of the American Psychosomatic Society, March 2-5, in Vancouver, Canada
111. Elevations of HHV-6 serology are associated with low NK cell Function, **Nancy Klimas**, Mary Ann Fletcher, Kevin Maher. International Conference on HHV6 Infection, Barcelona Spain May1-3, 2006.
112. **Klimas, NG** and Fletcher MA Neuropeptide Y in CFS and GWI, IACFS International Conference, Fort Lauderdale 2007
113. Vera, M, **Klimas, N**, Garcia L., Fletcher MA Isoprinosine in CFS (presentation) IACFS/ME Research Conference Reno Nevada, March 2009
114. Garcia, L, **Klimas N**, Fletcher MA Incidence of sleep disorders in CFS sample. IACFS/ME Research Conference Reno Nevada March 2009.
115. Broderick G, Fletcher MA, Vernon SD, **Klimas N**, 2009, Isolating Characteristic Immune Signals under Challenge in Gulf War Illness. Int Assoc CFS/ME, Reno, NV, March 12-15: Oral session Abstracts/ Latest Research in Immunology, abstract #3.

116. Fletcher MA., Ironson, G, Antoni, M, Hurwitz, **Klimas N.** Neuropeptide Y (NPY) correlates with symptom severity in chronic fatigue syndrome. 9<sup>th</sup> International IACFS/ME Research and Clinical Conference. Reno, NV. March 2009.
117. Fletcher MA, **Klimas NG** and Broderick G. Neuroimmune biomarkers in CFS. From infection to Neurometabolism: a nexus for CFS, a NIH sponsored workshop. Banbury Center, Cold Springs Harbor Laboratory, Long Island, NY. September, 2009 .
118. **Klimas NG**, Fletcher MA and Broderick G. Immunologic biomarkers for CFS/ME. 5th Annual Invest in ME/CFS Conference in London, 24 May 2010.
119. Katz B, Fletcher MA, Smith FA, Taylor R, Vernon SD, Broderick G. 2010. Cytokine Expression as a Potential Prognostic Indicator in Post-infectious Fatigue. Cytokines 2010; 52(1-2): SS11-7, 81.
120. Fletcher MA, **Klimas NG** and Broderick G Biomarkers for Chronic Fatigue Syndrome and Gulf War Illness, International Science Symposium on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Bond University, Queensland. Australia. 3-4 December 2010.
121. Fletcher MA, **Klimas NG.** Biomarkers in CFS/ME and GWI. IACFS/ME conference. Ottawa, September 22 -25, 2011.

5c. Research (Past 5 years):

Funded:

NIH	April 2016-March 2018	\$182,520
"Male-specific genomic mechanisms of transcriptional regulation of ME/CFS/SEID"		
Lubov Nathanson, PI, Nova Southeastern University; Role Co-I		
NIH	August 2015-July 2016	\$766,133
"Microbial Discovery and Immunity in ME/CFS" Role: PI		
DoD	June 2015-June 2018	\$560,000
"Testing the Model: A Phase I/II Randomized Double Blind Placebo Control Trial of Therapeutics: Liposomal Glutathione and Curcumin." Role: PI		
NIH R15	April 2015-March 2018	\$320,000
"Genomic Approach to Find Novel Biomarkers and Mechanisms of CFS/ME"		
Lubov Nathanson, PI, Nova Southeastern University; Role: CO-I		
DOD	June 2015-June 2018	\$805,000
"An integrated genomics and cell biology approach to correlate novel GWI indicators of infections and neuro-inflammatory mechanisms with targeted drug therapy"		
Paula Waziry, PI, Nova Southeastern University; Role- CO-I		
VA Merit	July 2014-July 2018	\$450,000/year

“Gender Differences in GWI and Dynamic Modeling” Role: PI

NIH RO1      August 2014 – July 2018      \$450,000/year  
“Gender Differences in CFS/ME and Dynamic Modeling” Role: Co-PI

DOD      September 2013-September 2017      \$4,100,000  
Gulf War Illness Consortium “Understanding GWI: An Integrative Modelling Approach”  
Mariana Morris, PI, Nova Southeastern University; Role: Co-PI, Clinical Core PI

DOD      September 2014-September 2017      \$190,000  
Gulf War Illness Consortium “Brain Immune Interactions as the basis for GWI”,  
Kim Sullivan, PI, Boston University; Role CO-I

CDC Contract:

Developing a clinical data base for longitudinal studies in CFS  
Role site PI, coinvestigator  
\$230,000/year Start date May 2012, 5 year contract

Recent:

NIAID RO1      October 2010 – September 2015  
"Genetic pathway Analysis in ME/CFS" 450,000/year 4 years with one year extension South  
Florida Veterans Foundation for Research and Education Role: PI

NIH RO1      2010 – 2015  
“Virtual platforms for CBT in CFS/ME” Mike Antoni, PI, University of Miami; Role: Co-PI

NIAID R21      2011- 2015  
“Microbial Translocation in ME/CFS” Mary Ann Fletcher, PI, Nova Southeastern University;  
Role-CO-PI

NIAID RO1 (2011-2012)  
“The role of XMRV in CFS” PI, Ian Lipkin, Columbia University  
Role: National Clinical Core Coordinator and Miami site PI 2 year study local budget \$125,000

DOD 6/2009 – 6/2011, no cost extension through June 2013  
"The Use of Comprehensive Molecular Profiling with Network and Control Theory to Better  
Understand GWI and Model Therapeutic Strategies" Award Number W81XWH-09-2-0071,  
\$500,000 (direct costs total over 3 years) Role: PI

R01AI065723 - 01      12/1/06 – 11/30/11, no cost extension through 11/30/12  
Immunologic Mechanisms, Biomarkers and Subsets in CFS  
NIAID (PI MA Fletcher)  
Goal of this project is to determine the immunologic basis for CFS pathogenesis  
Role: Co-PI

CFI (Chronic Fatigue Initiative): A Clinical and Biosample Database to Enable Discovery of

Pathogens and Pathogenic Mechanisms in ME/Chronic Fatigue Syndrome,  
Role: PI Funding approx \$1,400,000 over 2 years. 2/2011- 2/2013

R21: 12/01/2008 – 12/31/2011 (continuation year)  
Neuropeptide Y and dipeptidyl-peptidase IV (CD26) in chronic fatigue syndrome  
NIAAA (PI MA Fletcher)  
Goal of this project to determine the relationship of neuropeptide Y and dipeptidyl-peptidase IV to natural killer cell cytotoxicity in CFS.  
Role: Co-PI, R21AA016635-01

Merit Review 11/05 – 11/10  
Longitudinal follow up of GWI and CFS patients  
Veterans Administration  
Study of immune function and clinical symptoms in patients with Gulf War Illness.  
Role: PI

Merit Review 9/06 -8/10  
Gene Array Analysis of Gulf War Illness and Chronic Fatigue  
Veterans Administration  
Gene Array Analysis of Gulf War Illness and Chronic Fatigue Syndrome  
Role: PI

Foundation Research grant 03/07 – 03/09  
Mechanisms of Cytotoxic Cell Dysfunction in CFS  
CFIDS (PI N Klimas)  
Study of killer cells in CFS  
Role: PI, 15% UM effort

R01MH066697 09/04/03-6/30/08  
Psychobiological Processes and Health in HIV/AIDS  
NIMH R01 (PI G. Ironson)  
This grant examines psychological and biological (CTL, NK, cortisol) predictors of disease progression in HIV/AIDS.  
Role: Co-I. 5% UM effort

R01 9/30/06-8/31/10  
Virtual Cognitive Behavioral Therapy in Chronic Fatigue Syndrome  
NIMH (PI M Antoni)  
Evaluate CBT utilizing phone and web based interventions  
Role: Co-I, 5% UM effort

NIH sponsored Clinical Trial 2000 - 2009  
Immune Restoration with IL-2 in HIV infection – the ESPRIT study  
Role: Site PI

RO1 HL72712 09/30/02-08/31/07  
HIV/HCV Co-Infection: HAART and CVD Pathophysiology  
NIH/NHLBI (PI Hurwitz)

Role: Co-I

5d. Editorial Responsibilities:

Founding Editor: Journal of Chronic Fatigue Syndrome  
Haworth Press (1992-2001)  
Editorial Board, Journal of Chronic Fatigue Syndrome (2001 – current)  
Ad hoc reviewer, NEJM  
Ad hoc Reviewer, Journal of Clinical Immunology  
Ad hoc Reviewer, JAMA  
Ad hoc Reviewer, Annals of Internal Medicine  
Ad hoc Reviewer, AIDS  
Ad hoc Reviewer, JAIDS  
Ad hoc Reviewer, Psychosomatic Medicine  
Ad hoc reviewer, Brain Behavior and Immunity  
Ad hoc reviewer, PLoS one  
Ad hoc reviewer, Psychoneuroimmunology

5e. Professional and Honorary Organizations:

International Association for CFS/ME (previously AACFS), President 2003-2009  
International Academy of Behavioral Medicine  
Fellow, Academy for Behavioral Medicine Research  
International Association of Psychoneuroimmunology  
American Society for the Advancement of Science;  
Association of Medical Laboratory Immunologists  
Clinical Immunology Society  
Association of Women in Science;  
American Medical Woman's Association  
University of Miami Medical Women  
Florida Medical Association'  
Dade County Medical Association  
Gauze Ceiling Coalition (Miami Dade County Medical Women)

5f. Honors:

2016- World Class Faculty Award recipient by the Greater Fort Lauderdale Alliance  
2015 - NSU Fifth Annual Provost's Research and Scholarship Award  
2013 – IACFS/ME Perpich award for contributions to the field  
2011 – IACFS/ME Nelson Gantz Memorial Award for distinguished clinical service  
2011 - NOW Foundation's second annual Victoria J. Mastrobuono Women's Health Award  
2011 - Distinguished Alumni Award, University of Miami Medical Alumni Association  
2010 - May A Brunson Award for Achievement University of Miami Women's Commission  
2009 – Award named to honor research achievements “Nancy Klimas Research Excellence Award” awarded annually at the IACFS/ME Research Conference  
2004 – Honorary Degree, University of Catalonia, Barcelona Spain.  
1998 - Fellow - Academy for Behavioral Medicine Research

1992 - Iron Arrow (University of Miami Honor Association)  
1985 - American Cancer Society Institutional Research Award  
1984 - National Research Service Award  
1983 - Southern Medical Association Research Award  
1982 - Finalist Beecham Award, Southern Blood Club  
1982 - Finalist Burroughs-Wellcome Young Investigator Award

#### 5g. Other Professional Activities:

Miami VAMC AIDS Clinical and Research Unit Developed and wrote the proposal for the Miami VAMC AIDS Clinical and Research Unit, which was one of 3 selected for funding. The proposal included 3 million dollars in construction funds as well as infrastructure support. This resulted in one of the top VA HIV/AIDS clinical and research programs in the US, which is still in operation. Dr Klimas is Director of AIDS Research and Co-director of the Clinical HIV/AIDS program at the Miami VAMC. 1987 to present

South Florida CFS and GWI Research Center : Initially funded with an NIH center grant (Klimas, PI), and since supported with NIH , VA, DOD, and private foundation grants, the center is a clinical , translational, and basic science center that integrates research across disciplines. Current studies include genomics, immune, neuroendocrine studies , a natural history study, and clinical trials. Dr. Klimas is Center PI and coordinates the research efforts of four research interdisciplinary groups.

Canadian Government advisor in the development of the Clinical Case Definition for Chronic Fatigue Syndrome/Myalgic Encephalitis 2001, which is being revised in 2008.

6 month deployment CDC 2001 –, Molecular Epidemiology Program Viral Exanthems and Herpesvirus Branch, Developed the international protocol currently underway to empirically define CFS.

#### IACFS/ME

Dr. Klimas served as President of the International Association for Chronic Fatigue Syndrome (A national professional organization of investigators and clinicians) from 2005-2007 and was re-elected for another 3-year term in January of 2007. She organized the IACFS conference in Fort Lauderdale in January, 2007, and the conference in Reno Nevada in March 2009. Each of these conferences were attended by 400 patients and 350 professionals, and provided a unique opportunity for patients to meet and talk with leading international researchers and clinicians.

#### CFSAC: Chronic Fatigue Syndrome Advisory Committee

In 1996, Secretary for Health Donna Shalala chartered a special committee to advise the Department of Health and Human Services (DHHS) on policy regarding chronic fatigue syndrome (CFS), also known as chronic fatigue and immune dysfunction syndrome or CFIDS or Myalgic Encephalomyelopathy (ME). This committee, known as the DHHS Chronic Fatigue Syndrome Coordinating Committee (CFSCC), brought together officials representing various health agencies together with seven appointed members of the public to improve coordination of federal CFS programs. A year 2000 review of federal activities on CFS conducted by the General Accounting Office prompted several changes. Among them was the replacement of the

CFSCC with a standing committee, the CFS Advisory Committee (CFSAC), whose structure more closely matched other DHHS advisory bodies. Secretary Michael Leavitt most recently renewed the charter on August 30, 2006. Nancy Klimas served on this committee from 1997 to 2000. She was reappointed to another three-year term on the committee in 2007, which has been extended to 2011. She chairs the quality of life and education subcommittees.

NSU COM Institute for Neuro-Immune Medicine: A newly conceived program using clinical care templates to help diagnose and manage complex CFS/ME cases while collecting research data and developing the patient base for clinical trials work. Working with a basics science pathogenesis team, a computational biology team and a biomarkers discovery group, the institute merges clinical care with scientific discovery to promote new knowledge that can be applied to clinical care through rapidly employed translational clinical trials.

#### 5h. Consultantships

1987 - 1990 - VA National AIDS Steering Committee

1987 - 1990 - VA National AIDS Research Subcommittee

1987 - 1991 - VA Train the Trainer National AIDS Education Program

1988 - Present - VA National AIDS Prevention and Counseling Training Program

1988 - Present - Special Review Committee, National VA AIDS Prevention and Education

1990 – 2000 - VA National HIV Therapeutics Advisory Committee

1991 - 2000 - Board of Directors, American Association for Chronic Fatigue Syndrome (An international professional organization of investigators and clinicians).

2002 – 2006 - Board of Directors, International Association for Chronic Fatigue Syndrome/ME (An international professional organization of investigators and clinicians).

1992 - Chairperson of the Program Committee for the First International Meeting: Chronic Fatigue Syndrome, held in Albany NY, sponsored by the AACFS, NIH and CDC.

1994 - Local Coordinator and Program Committee member for the Second International Meeting: Chronic Fatigue Syndrome research Conference, held in Ft Lauderdale, October 1994, sponsored by AACFS, NIH, CDC, and Univ. of Miami.

1994 - Chairperson of the Program Committee for the CFS Clinical Conference, held in Ft. Lauderdale, October 1994, sponsored by AACFS.

1991- 1997 Consultant to Center for Special Immunology, Inc., Ft. Lauderdale, FL.

1993 - 2000 - Board of Directors, American Association for Chronic Fatigue Syndrome.

1993- Present Medical Advisory Board, Chronic Fatigue and Immunodeficiency Syndrome

Foundation.

1993- 1998 - Medical Advisory Board, Environmental Health Foundation.

2000 NIH State of the Science CFS Conference planning committee

2001 – present Name Change subcommittee, HHS CFS coordinating Committee

1999-present – CDC CFS Case Definition Revision Committee

2001 Canadian CFS Clinical Case definition expert panel

2001 CDC Expert Advisory Panel – long term outcomes study

2002 – present NIH reviewer and site visitor GCRC applications

2001- present Ad Hoc reviewer, Medical Research Council, United Kingdom.

2003 –present NIH reviewer CFS Special Emphasis Panel

2003 Brighton Collaboration on CFS Case Definition

2003 Elected to the Board of Directors, AACFS, 7 year term

2005 - 2009 President of the International Association for Chronic Fatigue Syndrome – this international organization of investigators and clinicians sponsors international and regional meetings, has developed a peer review journal, and works with government and regional groups to develop curricula and provider education programs.

2007 – 2012 CFSAC HHS Advisory committee to the Secretary of Health and Human Services

2008-2010 Chair HHS CFSAC subcommittee on Education

2010 – 5/2012 Chair, HHS CFSAC subcommittee on Quality of Life and Education

2010 International CFS/ME Case Definition working group,

2011 CFIDS Association of America Scientific Advisory Board

2011 Chronic Fatigue Initiative national coordinator, clinical sites.

2012- present Nova Southeastern University Research Advisory Committee

2011- present Nova Southeastern College of Osteopathic Medicine Research Committee

2013 – Research Advisory Committee for Gulf War Illness, VA Health care Systems

2013 - Institute of Medicine CFS Committee reviewing case definition and name

2013 - NIH Advisory Committee P2P program to develop research priorities in CFS/ME related research

## 5i. TEACHING

### Teaching Award:

Woman Faculty Member of the Year, 1989, UM Medical Women.

May Brunson Award, Woman Faculty Member of the Year, University of Miami 2010 (University of Miami Women's Commission)

### Recent Teaching Responsibilities:

Housestaff, Graduate Program, Medical School and Undergraduate lecturer (see lectures listed above)

General topics:

Clinical Immunology, Medical Laboratory Immunology, HIV Infection, Health and Human Values: Psychoneuroimmunology, Allergy and Immunology, CFS, Gulf War Illness, Stress and Disease.

Internal Medicine, Ward Attending, VA Medical Center (3 months/ year)

Allergy Clinic rotations for medical students, housestaff and Harrington Latin American Scholars.

HIV and Immunology rotations for medical students, housestaff and Harrington Latin American Scholars

Nationally/Internationally consulted in the development of CME course work for clinicians in the diagnosis and treatment of CFS in collaboration with the CDC and CFIDS Association of America

### Dissertation Advising:

Masters and Doctoral Students in University of Miami Psychology program (9 PhD candidates/3 MS candidates over last 5 years)

## 6. SERVICE TO THE UNIVERSITY

### 6a. University of Miami and VAMC Committees:

1. Medical School Admissions Committee, 1984-1987.
2. VA Human Subjects IRB, 1987.
3. Faculty Sponsor, UM Medical Women, 1985 - 2011
4. UMHC Infection Control Committee, 1989 - 1992.
5. VAMC Research Space Committee, 1988 - 1989.
6. VA Research and Education Foundation Board of Directors – 1999- present
7. UM Search Committee - AIDS/HIV senior and junior research faculty 2004-2011

8. Selection Committee – applicants for AAMC Women in Medicine Leadership Program
9. Executive Committee, GCRC 2002 – 2009
10. Executive Committee, Behavioral Medicine Research Center, 1999 - 2011
11. University of Miami Committee on Rank Salary and Conditions of employment 2003-2004
12. VA Research Committee, alternate 2004-present
13. UM Faculty Senate Professional Conduct Panel 2003 – 2011
14. University of Miami Miller School of Medicine Self Study LCME Women and Minority subcommittee 2007- 2009

Nova Southeastern Committees (2012 forward):

1. Nova Southeastern University Research Advisory Committee
2. Nova Southeastern College of Osteopathic Medicine Research Committee

#### 6b. Clinical Responsibilities

1. Director, CFS and GWI Clinical and Research Center, NSU and Miami VAMC
2. Co-director of VA Medical Center AIDS Clinical Unit,
3. HIV/AIDS Primary Care Clinic (Silver Team) – attending Monday clinic, and backing up Wednesday clinic. Daily oversight of 2 ARNP clinics.
4. General Medicine teaching attending, VAMC
5. Director, Miami VAMC Allergy Clinic, Tuesday MD clinic, and oversight of RN clinic and RN and ARNP clinic
6. Medical Director NSU Neuro Immune Clinics, Davie, FL and Kendall FL –training staff and overseeing quality of care in this clinic utilizing the CFS clinical care templates developed and implemented in this demonstration project site.

Consistently ranked “Outstanding” in the annual VAMC and university proficiency reporting, including clinical skills, teaching, productivity and administration.

#### 7. COMMUNITY ACTIVITIES

Health Crisis Network, Co-Founder and Past Chair of the Medical Advisory Committee and Board of Directors. (Currently Co-Cure Foundation, a Miami Dade HIV related community health organization) 1984, 1985-89

Member, National Task Force on Women's Health Issues, NOW (1995-present)

People with AIDS Coalition (PWAC), Board of Directors 1993-95

PWA Housing Coalition, Board of Directors 1993-95

Women's Emergency Network, Board of Directors 1998/99

Bessie Garrett Foundation – Homeless children outreach, Board of Directors 1999 – 2009

National Organization for Women, Health Advisory Board, 1992-2002

PANDORA – advocacy for people with neuro-inflammatory disorders, board of directors 2007 – present

CFIDS Association of America – Scientific Advisory Committee

# **RICHARD CARLTON DETH, PhD**

## **I. Personal Data and Education:**

### **A. Personal Data:**

Home Address:	9765 Dovetree Isle Drive Boynton Beach, Florida 33743
Work Address:	Nova Southeastern University 3200 South University Drive Fort Lauderdale, Florida 33328-2018
Contact Information:	Telephone (Work) (954)-262-1332 (Cell) (617)-678-0147 FAX (954)-262-2278 EMAIL rdeth@nova.edu

### **B. Education:**

1965-1970	Bachelor of Science (Pharmacy) S.U.N.Y. at Buffalo
1970-1975	Doctor of Philosophy (Pharmacology) University of Miami, School of Medicine

## **II. Professional Experience:**

### **A. Post-Doctoral Training**

1975-1976	Catholic University of Leuven (Belgium)
-----------	---

### **B. Professional/Administrative Experience**

1972-1976	Registered Pharmacist, State of Florida
1976-1981	Assistant Professor of Pharmacology, Northeastern University, Boston, MA
1981-1982	Section Leader, Pharmacology
1981-1987	Associate Professor of Pharmacology
1982-1986	Director, Pharmacy Program
1987-Present	Professor of Pharmacology
1990-1992	Chairman, Department of Pharmaceutical Sciences
2013-Present	Research Professor Florida Atlantic University
2014-Present	Professor of Pharmacology Nova Southeastern University

## **III. Memberships:**

Rho Chi, Sigma Xi, Phi Kappa Phi (Honor Societies)  
Society for Neuroscience  
American Society of Pharmacology and Experimental Therapeutics  
Society of Biological Psychiatry  
International Society for Autism Research

#### **IV. Current Research Interests:**

1. Role of redox and methylation status in neurodevelopmental disorders.
2. Receptor-dependent regulation of gene expression via epigenetic mechanisms.
3. Involvement of epigenetic mechanisms in drug addiction
4. Role of D<sub>4</sub>-dopamine receptor-mediated phospholipid methylation in psychiatric illnesses.
5. Redox and methylation effects of casein/gluten-derived opiate peptides.

#### **V. Teaching Experience**

Course coordination and lectures in undergraduate and graduate-level pharmacology courses.

Lecture areas have included:

**Undergraduate:** Autonomic Pharmacology, Neuropharmacology, Cardiovascular Pharmacology, G.I. Pharmacology, Autacoids, Diuretics, Anesthetic agents, Diabetes management, G.I. pharmacology, Endocrine pharmacology, Anti-inflammatory drugs.

**Graduate:** Molecular modeling, cardiovascular pharmacology and physiology, neuropharmacology, and receptor pharmacology

**Graduate Student Advisees:**

- Seventeen Ph.D. Thesis Students
- Five M.S. Thesis Students
- Service on numerous thesis committees

#### **VI. Scientific Advisory Board Memberships**

**Current:**

Autism Research Institute

Immunotec Inc.

Focus for Health

**Previous:**

National Autism Association

#### **VII. Grant Support**

**Current:**

1. R001 PI: R. Deth 7/1/2015-6/30/2016 1.0 calendar A2 Milk Corporation \$28,750  
Effects of BCM7 on uptake and transport of essential micronutrients

2. R002 PI: R. Deth 9/30/2014 – 9/29/2018 3.0 calendar Department of Defense \$513,526  
Testing the Model: A Phase I/II Randomized Double Blinded Placebo Control Trial of Targeted Therapeutics: Liposomal Glutathione and Curcumin

3. R003 PIs: K. Sullivan/M. Kregel; Co-PI R. Deth 9/1/2016-8/31/2019 0.5 calendar Department of Defense \$55,657.  
Examination of neuroimaging, cognitive functioning and plasma markers in a longitudinal cohort of Gulf War deployed veterans: The Ft. Devens Cohort

#### **VIII. Publications:**

##### **A. Articles:**

1. Chang, K.J., Deth, R.C., Triggle, D.J.: "Cholinergic antagonism among stereoisomers of a series of substituted 1,3 dioxolanes". J. Med. Chem., 15, 243-249 (1972).

2. Van Breemen, C., Farinas, B.R., Casteels, R., Gerba, P., Wuytack, R., **Deth, R.C.:** "Factors controlling cytoplasmic  $\text{Ca}^{2+}$  concentration". Phil. Trans. Roy Sci., Lond, B 265, 57-71 (1973).
3. **Deth, R.C.**, Van Breemen, C.: "Relative contributions of  $\text{Ca}^{2+}$  influx and cellular  $\text{Ca}^{2+}$  release during drug induced activation of the rabbit aorta". Pflugers Arch: 348, 13-22 (1974).
4. Van Breemen, C., **Deth, R.C.:** "La and excitation contraction coupling in vascular smooth muscle (pp. 26-31) in "Ionic actions of vascular smooth muscle", edit by E. Betz, Springer-Verlag Berlin (1976).
5. **Deth, R.C.**, Van Breemen, C.: "Agonist-induced release of intracellular  $\text{Ca}^{2+}$  in rabbit aorta". J. Membrane Biology, 30, 363-380 (1977).
6. **Deth, R.**, Casteels, R.: "A study of releasable  $\text{Ca}^{2+}$  fractions in smooth muscle cells". J. General Physiology, 69, 401-419 (1977).
7. **Deth, R.C.:** "The effect of Lanthanum and reduced temperature on  $\text{Ca}^{2+}$  efflux from the rabbit aorta". Am. J. Physiol. (Cell Physiology) 3 (3), C139-C145 (1978).
8. **Deth, R.C.** and Lynch, C.J.: "The binding of  $^3\text{H}$ -ouabain to Na-K ATPase sites in arterial smooth muscle". Pharmacology 21, 29-37 (1980).
9. **Deth, R.C.** and Lynch, C.J.: "Mobilization of a common source of smooth muscle  $\text{Ca}^{2+}$  by norepinephrine and methylxanthines". Am. J. Physiol. 240, C239-C247 (Cell Physiology) (1981).
10. **Deth, R.C.** and Lynch, C.J.: "Inhibition of alpha-receptor-induced  $\text{Ca}^{2+}$  release and  $\text{Ca}^{2+}$  influx by  $\text{Mn}^{2+}$  and  $\text{La}^{3+}$ ". Eur. Pharmacol. 71, (1981).
11. Lynch, C.J., **Deth, R.C.** and Steer, M.L.: "Simultaneous loss and reappearance of alpha-adrenergic responses  $^3\text{H}$ -prazosin binding sites in rat liver after irreversible blockage by phenoxybenzamine". B.B.A., 757, 156-163 (1983).
12. Awad, R. and **Deth, R.C.:** "Alpha-adrenergic subtype associated with receptor binding,  $\text{Ca}^{2+}$  release and contractile events in the rabbit aorta". J. Pharmacol. Exp. Ther. 227, 60-77 (1983).
13. Lynch, C.J. and **Deth, R.C.:** "Release of a common source of intracellular  $\text{Ca}^{2+}$  by alpha-adrenergic agonists and dinitrophenol in rat liver slices". Pharmacol. 28, 74-85 (1984).
14. **Deth, R.C.**, Smart, J.L., Lynch, C.J. and Walsh, R.: "Lack of correlation between  $^3\text{H}$ -ouabain binding and Na-K ATPase inhibition in rat aorta". Eur. J. Pharmacol. 99, 45-55 (1984).

15. Lynch, C.J., Guarino, J.J., **Deth, R.C.** and Steer, M.L.: "The effect of sucrose-feeding on alpha-adrenergic response in the rat liver". *Am. J. Physiol.* 246, E344-E349 (1984).
16. Danthuluri, N.R. and **Deth, R.C.**: "Phorbol ester-induced contraction of arterial smooth muscle and inhibition of alpha-adrenergic response". *Biochem. Biophys. Res. Comm.* 125, 1103-1109 (1985).
17. Lynch, C.J., Steer, M.L., Connors, M.R., Schatz, R.A. and **Deth, R.C.**: "Evidence for a decrease in the efficiency of beta-receptor coupling to adenylate cyclase in liver membranes from sucrose fed rats". *Biochem. Pharmacol.* 34, 623-629 (1985)
18. Tumas, J., **Deth, R.C.** and Kloner, R.A.: "Effects of nisoldipine on myocardial infarct size, hemodynamics, and myocardial performance". *J. Cardiovasc. Pharmacol.* 7, 383-391 (1985).
19. Campbell, M.D., Honeyman, T.M. and **Deth, R.C.**: "Correlation between  $^{32}\text{P}$ -labelling of phosphoinositides and agonist-induced contraction and  $\text{Ca}^{2+}$  fluxes in arteries". *Eur. J. Pharmacol.* 116, 129-136 (1985).
20. Danthuluri, N.R., and **Deth, R.C.**: "Acute desensitization to angiotensin II: Evidence for a requirement of agonist-induced diacylglycerol production during tonic contraction of rat aorta". *Eur. J. Pharmacol.* 126, 135-139 (1986).
21. Lynch, C.J., Steer, M.L., Smart, J.L. and **Deth, R.C.**: "Differences in the role of  $\text{Na}^+/\text{K}^+$  ATPase during  $\alpha_1$ -adrenergic events in rat and rabbit aorta". *Pharmacology* 33, 221-34 (1986).
22. Campbell, M.D., Danthuluri, N.R. and **Deth, R.C.**: "Differences in phospholipid incorporation of  $^{32}\text{P}$  relevant to  $\alpha_1$ -receptor coupling events in rat and rabbit aorta". *Biochem. Biophys. Res. Comm.* 141, 1213-1221 (1986).
23. Wick, P.F., Keung, A.C., Bowler, J.J. and **Deth, R.C.**: "Alpha-1 adrenergic coupling events induced by full and partial agonists in rabbit aorta". *J. Pharmacol. Exp. Ther.* 241, 458-464 (1987).
24. Gupta, S., Campbell, M.D., Cragoe, E.J., Jr. and **Deth, R.C.**: "Influence of ANF on receptor-initiated phosphoinositide metabolism and  $^{22}\text{Na}$  uptake in arteries". *Proc. Congress on Biologically Active Arterial Peptides* 1, 252-255 (1987).
25. Jagadeesh, G. and **Deth, R.C.**: "Different affinity states of alpha-1 adrenergic receptors defined by agonists and antagonists in bovine aorta plasma membranes". *J. Pharmacol. Exp. Ther.* 243, 430-436 (1987).
26. Danthuluri, N.R., Berk, B.C., Brock, T.A., Cragoe, E.J., Jr., and **Deth, R.C.**: "Protein kinase C-mediated intracellular alkalinization in rat and rabbit aortic smooth muscle cells". *Eur. J. Pharmacol.* 141, 403-506 (1987).

27. **Deth, R.C.**, Payne, R.A. and Peecher, D.M.: "Influence of furosemide on rubidium-86 uptake and alpha-adrenergic responsiveness of arterial smooth muscle". *Blood Vessels* 24, 321-333 (1987).
28. Smart, J.L. and **Deth, R.C.**: "Influence of  $\alpha_1$ -adrenergic receptor stimulation and phorbol esters on hepatic  $\text{Na}^+/\text{K}^+$  ATPase activity". *Pharmacology* 37, 94-104 (1988).
29. Danthuluri, N.R. and **Deth, R.C.**: "Contractile effects of ammonium chloride in relation to agonist-induced intracellular alkalinization". *Am. J. Physiol. (Heart and Circ.)* H867-H875 (1989).
30. Ek, T.P. and **Deth, R.C.**: "Reduced EIPA sensitive Na/H exchange in SHR arteries". *Hypertension* 12, 331 (1988).
31. Ek, T.P., Campbell, M.D. and **Deth, R.C.**: "Reduction of norepinephrine-induced tonic contraction and phosphoinositide turnover in arteries of spontaneously hypertensive rats: A possible role for protein kinase C". *Am. J. Hypertension* 2, 14-18 (1988).
32. Jagadeesh, G. and **Deth, R.C.**: "Phorbol ester-induced modulation of agonist and antagonist binding to  $\alpha_1$  adrenergic receptor in bovine aorta". *J. Pharmacol. Exp. Ther.* 247, 196-202 (1988).
33. Gupta, S., Campbell, M.D., Cragoe, E.J., Jr. and **Deth, R.C.**: "Influence of ANF on 32P-phospholipid labelling and EIPA-sensitive  $^{22}\text{Na}$  uptake in rabbit aorta". *J. Pharmacol. Exp. Ther.* 248, 991-996 (1989).
34. Jagadeesh, G. and **Deth, R.C.**: "Modulation of bovine aortic alpha-1 receptors by  $\text{Na}^+$  5'guanylylinidophosphate, amiloride and ethyl-isopropylamiloride for receptor G-protein precoupling". *J. Pharmacol. Ther.* 252, 1184-1196 (1990).
35. Tian, W. and **Deth, R.C.**: "Species differences in chloroethylclonidine antagonism at vascular alpha-1 adrenergic receptors". *J. Pharmacol. Exp. Ther.* 253, 877-883 (1990).
36. **Deth, R.C.**, Lesburg, C., Li, S., Cragoe, E.J., Jr.: "Influence of amiloride derivatives on arterial contractility". *J. Pharmacol. Exp. Ther.* 253, 530-536 (1990).
37. Jagadeesh, G., Tian, W., Gupta, S. and **Deth, R.C.**: "Age-dependent differences in alpha-1 adrenergic receptor/G-protein coupling". *Eur. J. Pharmacol.* 189, 11-21 (1990).
38. **Deth, R.C.**: "Function of the PI cycle in arterial smooth muscle during hypertension". *Cardiovascular Drug Reviews.* 2, 78-91 (1991).
39. Jagadeesh G., Tian, W., and **Deth, R.C.**: "Agonist-induced modulation of agonist binding to alpha-1 adrenoceptors in bovine aorta". *Eur. J. Pharmacol.* 208, 163-170 (1991).

40. Aburto, T.K., Jinsi, A. and **Deth, R.C.**: "Involvement of protein kinase C activation in alpha-2 adrenergic receptor-mediated contractions of rabbit saphenous vein". *Eur. J. Pharmacol.* 277:24-34 (1995).
41. Jagadeesh, G. and **Deth, R.C.**: "Protein kinase C modulation of antagonist and agonist binding at alpha-2 adrenergic receptors". *J. Pharmacol. Exp. Ther.* 262, 775-783 (1992).
42. Tian, W. and **Deth, R.C.** : "Precoupling of Gi/Go-linked receptors and its allosteric regulation by monovalent cations". *Life Sciences.* 52, 1899-1907 (1993).
43. Tian, W.-N., Lanier, S.H., Duzic, E. and **Deth, R.C.**: "Determinants of alpha-2 adrenergic receptor activation of G-proteins: Evidence for a precoupled R/G state". *Mol. Pharmacol.* 45:524-531 (1994).
44. Shi, A.-G. and **Deth, R.C.**: "Precoupling of alpha-2B adrenergic receptors and G-proteins in transfected PC-12 membranes as revealed by pertussis toxin and a lysine-directed crosslinker". *J. Pharmacol. Exp. Ther.* 271:1520-1527 (1994).
45. Waen-Safranchik, V. and **Deth, R.C.**: "Effects of Wortmannin on alpha-1 and alpha-2 adrenergic receptor mediated vascular contractile responses in rabbit vascular tissues". *Pharmacol.* 48: 349-359 (1994).
46. Jinsi, A. and **Deth, R.C.**: "Alpha-2 adrenoceptor-mediated vasoconstriction requires a tyrosine kinase". *Eur. J. Pharmacol.* 277: 24-34 (1995)
47. Tian, W.-N., Duzic, E., Lanier, S.M. and **Deth, R.C.**: "Receptor reserve for alpha<sub>2D</sub>-adrenergic receptor-regulated G-protein activation in PC12 cell membranes". *Pharmacol.* 52: 252-262 (1996).
48. Jinsi, A., Paradise, J. and **Deth, R.C.**: "A tyrosine kinase regulates alpha  $\alpha$ - 2 adrenoceptor-stimulated contraction and phospholipase D activation in the rat aorta." *Eur. J. Pharmacol.* 302: 183-190 (1996)
49. Liu, Y.-F., **Deth, R.C.** and Devys, D.: "SH3 domain-dependent association of Huntingtin with epidermal growth factor receptor signaling complexes". *J. Biol. Chem.* 272: 8121-8124 (1997).
50. Jinsi-Parimoo, A. and **Deth, R.C.**: "Reconstitution of alpha<sub>2D</sub>-adrenergic receptor coupling to phospholipase D in a PC12 cell lysate". *J. Biol. Chem.* 272: 14556-14561 (1997).
51. Sharma, A., Kramer, M., Wick, P.F., Liu, D., Chari, S., Shim, S., Tan, W.-B., Ouellette, D., Nagata, M., DuRand, C., Koth, M. and **Deth, R.C.**: "Dopamine D<sub>4</sub> receptor-mediated methylation of membrane phospholipids and its implications for mental illnesses such as schizophrenia". *Molecular Psychiatry* 4: 235-246 (1999).
52. Jinsi-Parimoo, A. and **Deth, R.C.**: "Protein kinase C and tyrosine kinase-dependent coupling of alpha-2A/D adrenergic receptors to phospholipase D". *Pharmacol.* 60: 19-26 (2000).

53. Tian, W.-N., Miller, D.D. and **Deth, R.C.**: "Bidirectional allosteric effects of agonists and GTP binding at  $\alpha_{2A/D}$ -adrenergic receptors". J. Pharmacol. Exp. Ther. 292: 664-671 (2000).
54. Tian, W.-N. and **Deth, R.C.**: "Differences in efficacy and  $\text{Na}^+$  sensitivity between  $\alpha_{2B}$  and  $\alpha_{2D}$  adrenergic receptors" Pharmacology 61: 14-21 (2000)
55. Zhao, R., Chen, Y., Tan, W., Waly, M., Malewicz, B., Stover, P., Rosowsky, A. and **Deth, R.C.**: "Influence of single-carbon folate and *de novo* purine synthesis pathways on D4 dopamine receptor-mediated phospholipid methylation." J. Neurochem. 78: 788-796 (2001)
56. Sharma, A. and **Deth, R.C.**: "Protein kinase C regulates basal and D4 dopamine receptor-mediated phospholipid methylation in neuroblastoma cells." Eur. J. Pharmacol. 427: 83-90 (2001).
57. Deth, R.C., Sharma, A. and Waly, M.: "Dopamine-stimulated solid-state signaling: A novel role for single-carbon folates in human attention." In: Proc. 12<sup>th</sup> Int. Symp. Chem. Pteridines and Folates. Kluwer Academic Press (2002).
58. Zhu Q., Qi, L.-J., Abou-Samra, A., Shi, A. and **Deth, R.C.**: "Protein kinase C-dependent constitutive activity of  $\alpha$ -2A/D-adrenergic receptors." Pharmacol. 71: 80-90 (2004).
59. Waly, M., Banerjee, R., Choi, S.W., Mason, J., Benzecry, J., Power-Charnitsky, V.A, **Deth, R.C.** "PI3-kinase regulates methionine synthase: Activation by IGF-1 or dopamine and inhibition by heavy metals and thimerosal" Molecular Psychiatry 9: 358-370 (2004).
60. Deth, R.C., Kuznetsova, A. and Waly, M.: "Attention-related signaling activities of the D4 dopamine receptor" in *Cognitive Neuroscience of Attention*, Michael Posner Ed., Guilford Publications Inc., New York (2004). p 269-282.
61. Culley, D.J., Raghavan, S.V., Waly, M., Baxter, M.G., Yukhananov, R., **Deth, R.C.** and Crosby, G.: "Nitrous oxide decreases cortical methionine synthase transiently but produces lasting memory impairment in aged rats." Anesthesia and Analgesia 105: 83-88 (2007).
62. Kuznetsova, A.Y., and **Deth, R.C.**: "A model for gamma oscillations induced by D4 dopamine receptor-mediated phospholipid methylation." J. Computational Neuroscience 24 (3):314-29 (2008).
63. **Deth, R.**, Muratore, C., Benzecry, J., Power-Charnitsky, V., and Waly, M. "How environmental and genetic factors combine to cause autism: A Redox/Methylation Hypothesis." Neurotoxicology 29: 190-201 (2007).
64. **Deth, R.C.**, Muratore, C., and Waly, M.: "Oxidative stress in autism and its implications for dopamine-stimulated phospholipid methylation" in *Neurochemical Basis of Autism: Molecules to Minicolumns*, Gene Blatt Ed., Springer, New York (2009).
65. Kane, P., Cartaxo, A., and **Deth, R.C.**: "Nutritional issues in the causation and treatment of autism", in *Food and Nutrients in Disease Management*, Ingrid Kohlstadt Ed., CRC Press, Boca Raton (2008).

66. **Deth, R.C.:** The Redox/Methylation Hypothesis of Autism: A Molecular Mechanism for Heavy Metal-induced Neurotoxicity. In *Autism: Oxidative Stress, Inflammation and Immune Abnormalities*, A. Chauhan, V. Chauhan, W.T. Brown Eds., Taylor & Francis/CRC Press, Boca Raton (2009).
67. Mutter, J., Curth, A., Naumann, J., **Deth, R.** and Walach, H: “Does Inorganic Mercury Play a Role in Alzheimer’s Disease? A Systematic Review and an Integrated Molecular Mechanism” *J Alzheimer’s Disease* 22: 357-374 (2010).
68. Deth, R.C., Waly, M., Muratore, C. and Hodgson, N. “Redox Imbalance and the Metabolic Pathology of Autism.” In *"Developmental Neurotoxicology Research: Principles, Models, Techniques, Strategies and Mechanisms"* Section V: *Autism Spectrum Disorders* Section Ed. Isaac Pessah, John Wiley and Sons, Hoboken, (2010).
69. Waly, M.I., Kharbanda, K.K. and **Deth, R.C.** “Ethanol Lowers Glutathione in Rat Liver and Brain and Inhibits Methionine Synthase in a Cobalamin-dependent Manner” *Alcoholism: Clinical and Experimental Research* 35: 277-83 (2011).
70. **Deth, R.C.** “The Redox/Methylation Hypothesis of Autism” *U.S. Psychiatry* 3: 48-52 (2010).
71. Al-Farsi, Y.M., Al-Sharbati, M.M., Waly, M.I., Al-Farsi, O.A, Al-Shafae, M.A. and **Deth, R.C.** “Malnutrition among preschool-aged autistic children in Oman.” *Research in Autism Spectrum Disorders*. 5 1549-52 (2011).
72. **Deth RC.** Genomics, intellectual disability, and autism. *N Engl J Med*. 2012 Jun 7;366(23):2231-2;
73. **Deth, R.C.**, Hodgson, N.W., Trivedi, M.S., Muratore, C.R., and Waly, M.I. Autism: a neuroepigenetic disorder. *Autism Science Digest* 3: 7-18 (2012).
74. Waly, M, Muratore, C., Power-Charnitsky, V., Bojkovic, J., Thomas, E., Sharma, A., Audhya, T. and **Deth, R.C.:** Exon skipping in human neuronal methionine synthase is associated with glutathione dependence and potent inhibition by heavy metals. *Oxidative Medicine and Cellular Longevity* (Under review)
75. Ali, A., Waly, M.I., Al-Farsi, Y.M., Essa, M.M, Al-Sharbati, M.M., and **Deth, R.C.:**Hyperhomocysteinemia among Omani autistic children:a case-control study. *Acta Biochimica Polonica* 58: 547-51, 2011.
76. Yeter, D., **Deth, R.** ITPKC susceptibility in Kawasaki syndrome as a sensitizing factor for autoimmunity and coronary arterial wall relaxation induced by thimerosal's effects on calcium signaling via IP3. *Autoimmunity Reviews*. 2012 Apr 1. [Epub ahead of print]
77. Terhune, T.D., **Deth, R.C.** How Aluminum Adjuvants Could Promote and Enhance Non-target IgE Synthesis in a Genetically-Vulnerable Sub-population. *J Immunotoxicology*. 2013 Apr-Jun;10(2):210-22

78. Dufault, R., Lukiw, W.J., Crider, R., Schnoll, R., Wallinga, D., **Deth, R.** A macroepigenetic approach to identify factors responsible for the autism epidemic in the United States. *Clinical Epigenetics*. 2012 Apr 10;4(1):6.
79. Waly, M.I., Hornig, M., Trivedi, M., Hodgson, N., Kini, R., Ohta, A., **Deth, R.** Prenatal and Postnatal Epigenetic Programming: Implications for GI, Immune, and Neuronal Function in Autism. *Autism Research and Treatment*. 2012 [doi:10.1155/2012/190930]
80. Al-Farsi, Y.M., Al-Sharbati, M.M., Waly, M.I., Al-Farsi, O.A., Al-Shafae, M.A., Al-Khaduri, M.M., Trivedi, M.S., **Deth, R.C.** Effect of suboptimal breast-feeding on occurrence of autism: A case-control study. *Nutrition*. 2012 Jul;28(7-8):e27-32.
81. **Deth, R.C.** Genomics, intellectual disability, and autism. (Letter to the Editor) *N Engl J Med*. 2012; 366:2231-2.
82. Trivedi, M.S., **Deth, R.C.** Role of a Redox-Based Methylation Switch in mRNA Life Cycle (Pre- and Post-Transcriptional Maturation) and Protein Turnover: Implications in Neurological Disorders. *Frontiers in Neuroscience*. 2012;6:92.
83. Kern, J.K., Geier, D.A., Geier, M.R., **Deth, R.C.** Are ASD and ADHD a Continuum? A Comparison of Pathophysiological Similarities Between the Disorders. *Journal of Attention Disorders* 2012 Oct 16. [Epub ahead of print]
84. Raymond, L.J., **Deth, R.C.**, Ralston, N.V.C: Potential Role of Selenoenzymes and Antioxidant Metabolism in relation to Autism Etiology and Pathology. *Autism Res Treat*. 2014:164938.
85. Al-Farsi, Y.M., Waly, MI, Allal Ouhtit, A., Al-Sharbati, M.M., Al-Shafae, M., Al-Farsi, O., Al-Khaduri, M.M., Gupta, I., Al-Khalili, M., Al-Adawi, S., Hodgson, M.W, and **Deth, R.C.** Low Folate and Vitamin B12 Nourishment is Common among Omani Children Newly Diagnosed with Autism. *Nutrition* 2013 Mar;29(3):537-41.
86. Al-Farsi YM, Waly MI, Al-Sharbati MM, Al-Shafae MA, Al-Farsi OA, Al-Khaduri MM, Gupta I, Ouhtit A, Al-Adawi S, Al-Said MF, **Deth RC.** Levels of Heavy Metals and Essential Minerals in Hair Samples of Children with Autism in Oman: a Case-Control Study. *Biol Trace Elem Res*. 2013 Feb;151(2):181-6.
87. Al-Farsi YM, Waly MI, **Deth RC**, Al-Sharbati MM, Al-Shafae M, Al-Farsi O, Al-Khaduri MM, Al-Adawi S, Hodgson NW, Gupta I, Ouhtit A. Impact of nutrition on serum levels of docosahexaenoic acid among Omani children with autism. *Nutrition*. 2013 (13) 00196-2.
88. Muratore CR, Hodgson NW, Trivedi MS, Abdolmaleky HM, Persico AM, Lintas C, De la Monte S, **Deth RC.** “Age-dependent decrease and alternative splicing of methionine synthase mRNA in human cerebral cortex and an accelerated decrease in autism. *PLoS One*. 2013;8(2):e56927.
89. Hodgson N, Trivedi M, Muratore C, Li S, **Deth R.** Soluble Oligomers of Amyloid- $\beta$  Cause Changes in Redox State, DNA Methylation, and Gene Transcription by Inhibiting EAAT3 Mediated Cysteine Uptake. *J Alzheimers Dis*. 2013; 36(1):197-209.

90. Kocsis B, Lee P, **Deth R**. Enhancement of gamma activity after selective activation of dopamine D4 receptors in freely moving rats and in a neurodevelopmental model of schizophrenia. *Brain Struct Funct*. 2013 Jul 10. [Epub ahead of print]
91. Yeter D, **Deth R**, Kuo H-C. Mercury Promotes Catecholamines Which Potentiate Mercurial Autoimmunity and Vasodilation: Implications for Inositol 1,4,5-Triphosphate 3-Kinase C Susceptibility in Kawasaki Syndrome. *Korean Circ J*. 2013; 43:581-591.
92. **Deth RC**. Autism: a redox/methylation disorder. *Glob Adv Health Med*. 2013; 2(6):68-73.
93. **Deth R**, Trivedi MS, Hodgson NW, Muratore CR and Waly MI. Redox-Methylation Theory and Autism. In: *Comprehensive Guide to Autism*, Springer, 2013.
94. Hodgson, N.W, Waly, M.I., Al-Farsi, Y.M., Al-Sharbati, M.M., Al-Farsi, O., Ali, A., Ouhtit, A., Zang, T., Zhou., Z.S., **Deth, R.C**. Decreased glutathione and elevated hair mercury levels are associated with nutritional deficiency-based autism in Oman. *Exp. Biol. Med. (Maywood)*. 2013, 239(6):697-706.
95. Trivedi M, Shah J, Hodgson N, Byun HM, **Deth R**. Morphine induces redox-based changes in global DNA methylation and retrotransposon transcription by inhibition of excitatory amino Acid transporter type 3-mediated cysteine uptake. *Mol Pharmacol*. 2014; 85(5):747-57.
96. Trivedi, MS, Shah, JS, Al-Mughairy, S, Hodgson NW, Simms B, Trooskens BA, Van Criekeing, W, **Deth RC**. Food-derived opioid peptides inhibit cysteine uptake with redox and epigenetic consequences. *J Nutritional Biochemistry* 2014 ;25(10):1011-8.
97. Walach, H, Mutter, J and **Deth, RC**. "Inorganic Mercury and Alzheimer's Disease-Results of a Review and a Molecular Mechanism" pp 593-602 in *Diet and Nutrition in Dementia and Cognitive Decline* ed. C. R. Martin and V.R. Preedy, 2015, Elsevier, (London, UK).
98. Terhune TD, **Deth RC**. A role for impaired regulatory T cell function in adverse responses to aluminum adjuvant-containing vaccines in genetically susceptible individuals. *Vaccine*. 2014, 32(40):5149-55.
99. Trivedi MS, **Deth RC**. Redox-based Epigenetic status in Drug Addiction: Potential mediator of drug-induced gene priming phenomenon and use of metabolic intervention for symptomatic treatment in drug addiction. *Frontiers in Neuroscience* 2015; 8:444.
100. Trivedi M, Zhang Y, Lopez-Toledano M, Clarke A, **Deth R**. Differential neurogenic effects of casein-derived opioid peptides on neuronal stem cells: implications for redox-based epigenetic changes. *J Nutr Biochem*. 2016 Nov;37:39-46.
101. Zhang Y, Hodgson N, Trivedi M and **Deth RC**. Neuregulin-1 promotes glutathione-dependent neuronal cobalamin metabolism by stimulating cysteine uptake. *Oxidative Medicine and Cellular Longevity*. 2016;2016:3849087. Epub 2015 Dec 29.
102. Kern JK, Geier DA, **Deth RC**, Sykes LK, Hooker BS, Love JM, Bjorklund G, Chaigneau CG, Haley BE, Geier MR. Systematic Assessment of Research on Autism Spectrum Disorder and Mercury Reveals Conflicts of Interest and the Need for Transparency in Autism Research. *Sci*

Eng Ethics. 2015 Oct 27. [Epub ahead of print]

103. Zhang Y, Hodgson NW, Trivedi MS, Abdolmaleky HM, Fourniere M, Cuenod M, Quang Do K, **Deth RC**. Decreased brain levels of vitamin B12 in aging, autism and schizophrenia. PLOS ONE 2016 Jan 22;11(1):e0146797. doi: 10.1371/journal.pone.0146797. eCollection 2016. PMID: 26799654
104. Waly M, Power-Charnitsky V-A, Hodgson N, Sharma A, Audhya T, Zhang Y and **Deth R**. Neuroblastoma Cells: Cobalamin and GSH Dependence and Inhibitory Effects of Neurotoxic Metals and Thimerosal. Oxidative Medicine and Cellular Longevity 2016;2016:6143753. doi: 10.1155/2016/6143753. Epub 2016 Feb 18.
105. Trivedi MS, Hodgson NW, Walker SJ, Trooskens G, Nair V, **Deth RC**. Epigenetic effects of casein-derived opioid peptides in SH-SY5Y human neuroblastoma cells. Nutr Metab (Lond). 2015 Dec 9;12:54. doi: 10.1186/s12986-015-0050-1. eCollection 2015. PMID: 26664459.
106. Zang T, Pottenplackel LP, Handy DE, Loscalzo J, Dai S, **Deth RC**, Zhou ZS and Ma J. Comparison of Protein N-Homocysteinylolation in Rat Plasma under Elevated Homocysteine Using a Specific Chemical Labeling Method. Molecules 2016, 21, 1195; doi:10.3390/molecules21091195
107. **Deth R**, Clarke A, Ni J, Trivedi M. Clinical evaluation of glutathione concentrations after consumption of milk containing different subtypes of  $\beta$ -casein: results from a randomized, cross-over clinical trial. Nutr J. 2016 Sep 29;15(1):82.

#### **IX. Monograph:**

**Deth, R.C.** “Molecular Origins of Attention: The Dopamine-Folate Connection”  
Kluwer Academic Publishers (April, 2003)

#### **X. Patents:**

1. “Compositions and methods for diagnosing schizophrenia” Inventor: **Richard C. Deth**; Patent# 5686255; Date of issue: Nov. 11, 1997. Claims restricted to the diagnosis of schizophrenia and related psychiatric disorders with novel laboratory tests involving D4 dopamine receptor-mediated phospholipid methylation.
2. “Compositions and methods for diagnosing schizophrenia” Inventor: **Richard C. Deth**; Patent# 5,738,998; Date of issue: April 14, 1998. Claims restricted to the use of novel assays for the discovery of new therapeutic entities.
3. “Methods and materials for the diagnosis and treatment of schizophrenia and related disorders” Inventor: Northeastern University/**Richard C. Deth**; Patent# 6,080,549; Date of issue: June 27, 2000.

4. “Methods of identifying and determining the effectiveness of therapeutic processes or agents for the treatment of schizophrenia and related disorders” Inventor: Northeastern University/**Richard C. Deth**; Patent# 6,773,892; Date of issue: August 10, 2004.

**NOVA Southeastern University  
Curriculum Vitae**

**I. PERSONAL**

1. Name: Mary Ann Fletcher
2. Home Phone: 305-596-5535
3. Office Phone: 954-465-5120
4. Home Address: 10700 SW 90<sup>th</sup> Ave, Miami, FL 33176
5. Current Academic Rank: Schemel Family Endowed Professor
6. Primary Department: Clinical Immunology
7. Citizenship: USA

**II. HIGHER EDUCATION**

1. Texas Technological College, B.S. (honors), Major, Microbiology, 1959
2. University of Texas, M.A., Chemistry, 1961
3. Baylor University, Ph.D., Microbiology and Immunology, 1966
4. Northwestern University, immunochemistry, postdoctoral fellowship, 1966-68

**III. CERTIFICATIONS AND LICENSURES**

1. Diplomat American Board of Bioanalysis - High Complexity Laboratory Director, Clinical & Technical Consultant
2. State of Florida licensed and CLIA certified as Clinical Laboratory Director

**IV. EXPERIENCE**

1. 2013 –present: Schemel Family Endowed Professor, Institute for Neuro-Immune Medicine, College of Osteopathic Medicine, NOVA Southeastern University, Davie, FL
2. 2013-present: Director, INIM E.M. Papper Clinical Immunology Laboratory, NOVA Southeastern University, Davie, FL
3. 1981 - 2013: Tenured Professor of Medicine, University of Miami Miller School of Medicine, Miami, FL
4. 1982 – 2013,: Professor of Microbiology/Immunology, UM Miami School of Medicine, Miami, FL
5. 1989 - 2013: Professor of Psychology, UM, Coral Gables, FL
6. 1982 - 2013: Director, E.M. Papper Clinical Immunology Laboratory, UM School of Medicine, Miami, FL
7. 1978 - 2013t: Member of the Graduate Faculty, UM, Coral Gables, FL
8. 1978 -1981: Associate Professor of Microbiology, UM School of Medicine, Miami, FL
9. 1977 - 1981: Tenured Associate Professor of Medicine, UM School of Medicine, Miami, FL
10. 1972 – 1976 : Assistant Professor of Medicine, UM School of Medicine, Miami, FL
11. 1970 - 1972: Adjunct Assistant Professor of Biology, Illinois Institute of Technology, Chicago, IL
12. 1969 -1972: Assistant Director, Division of Hematology, Michael Reese Hospital and Medical Center, Chicago, IL
13. 1969 -1972: Assistant Attending Physician, Special Staff, Michael Reese Hospital and Medical Center, Chicago, IL..

14. 1967 -1969: Instructor and Asst Professor, Dept. Microbiology, Northwestern University Medical School, Chicago, IL
15. 1966 - 1969: Postdoctoral fellow, Northwestern University, Evanston Hospital, Evanston, IL
16. 1963 - 1966: Research Associate, Graduate Research Institute of Baylor University, Dallas, TX
17. 1962 - 1963: Clinical Bacteriologist, Spohn Hospital & Driscoll Found. Hospital, Corpus Christi, TX
18. 1959 - 1961: Research Assistant, Dept Microbiology, Univ. of Texas, Southwestern Medical School, Dallas, TX.

## V. PUBLICATIONS (BOOKS AND MONOGRAPHS)

1. Springer, G.F., Fletcher, M.A, and Pavlovskis, O. Homogeneous Erythrocyte Glycoproteins with Blood Group -, Virus -, and Endotoxin Receptor Activities. In *Protides of the Biological Fluids* 15:109-122, 1967, H. Peeters, ed., Elsevier Pub. Co., Amsterdam.
2. Springer, G.F., Fletcher, M.A: Cell Surface Receptors: Structural Aspects and Importance in Immunopathology In *Organ Transplantation*, pp47-62, Hymer and Ricken, eds., Schattauer, Stuttgart, 1969.
3. Levey, G.S., Fletcher, M.A. and Klein, I. Glucagon and Adenylate Cyclase: Binding Studies and Requirements for Activation. In *Advances In Cyclic Nucleotide Research*, Vol. 5, edited by G.I. Drummon, P. Greengard, and G. Robinson, Raven Press, New York, 1975.
4. Levey, G., Fletcher, M.A and S. Ramachandran: Methods to Characterize the Cardiac Glucagon Receptor. In *Methods in Receptor Research*, edited by M. Blecker, pp. 143-147, Marcel Dekker, Inc., New York, 1976.
5. Fletcher, M.A, Lo, T.M. and Graves, W.R.: Glycoproteins from the Bovine Erythrocyte Membrane. Glycoconjugate Research Vol. II. *Proceedings of the Fourth International Symposium On Glycoconjugates*. R. Jeanloz., Academic Press, Inc. N.Y. pg. 1047-1050, 1978.
6. Fletcher, M.A., Lo, T.M. and Caldwell, K.E.: Interaction of Limulin with Membrane Glycoproteins, *Biomedical Applications of the Horseshoe Crab (Limulidae)* E. Cohen, ed., Alan Liss, Inc. N.Y. pg. 655-664, 1979.
7. Claflin, A.J., McKinney, E.C and Fletcher, M.A.: Immunologic Studies of Prostate Adenocarcinoma In Animal Models. *Model System For Prostate Cancer*, G. Murphy, ed., Alan Liss, Inc. N.Y., 365-376, 1980.
8. Saez, L., Latif, A., Caldwell, K. and Fletcher, M.A.: Heterophile Antigen Common to Human Tissues and Bovine Erythrocytes. in *HLA Antigens In Health, Aging and Malignancy*, (Cohen, E. and Singa, D.P., ed.) Alan R. Liss, Inc., New York, pp. 221-225, 1983.
9. Caldwell, K.E. and Fletcher, M.A A Paul-Bunnell Antibody Reactive Glycoprotein From Canine Erythrocyte Membranes. In *Glycoconjugates*, Davidson, E.A., Williams, J.C. and DiFerrante, N.M., eds., Prager, N.Y. p590-590, 1986.
10. Fletcher, M.A., Caldwell, K.E. and Klimas, N.G. The Use of Glycoprotein-Latex Conjugates in a Rapid Slide Test for Paul-Bunnell (P-B) Antibodies in Unabsorbed Sera. *Clinical Immunology* Pruzanski, W, Seligmann, M., eds, Elsevier Science Publ., Amsterdam, pg 247-250, 1987.
11. LaPerriere, A., Schneiderman, N., Antoni, A. and Fletcher, M.A. Aerobic Exercise Training and Psychoneuroimmunology in AIDS Research. in *Psychosocial Aspects of AIDS*. edited by L. Temoshok and A. Baum. Lawrence Erlbaum and Associates, 1990.
12. Klimas, N.G., Baron, G.C. and Fletcher, M.A. The Immunology of HIV-1 Infection. in *Stress, Coping and Disease* edited by Schneiderman, N., McCabe, P., Fields, T. and Skyler, J. Lawrence Erlbaum and Associates, Hillsdale, N.J. p193-209, 1991.

13. Fletcher, M.A., Klimas, N.G., Morgan, R. and Gjerset, G. Lymphocyte Proliferation Assays. in *Manual of Clinical Laboratory Immunology*, 4th edition, Rose, N. and Fahey, J. eds., Amer. Soc. Microbiology. pg. 213-219, 1992.
14. LaPerriere, A., Antoni, M., Klimas, N.G., Schneiderman, N. and Fletcher, M.A. Psychoimmunology and Stress Management in HIV-1 Infection. in *Update in Psychoneuroimmunology*, Gorman, J.M. and Kertzner, R.M., eds. Progress in Psychiatry, #35, Spiegel, D. series ed., American Psychiatric Press, Washington, D.C., p. 81-112, 1991.
15. LaPerriere, A., Antoni, M., Fletcher, M.A. and Schneiderman, N. Exercise and Health Maintenance in AIDS. In *Clinical Assessment and Treatment in HIV: Rehabilitation of a Chronic Illness*. Galantino, F., ed., Slack, Inc., Thorofare, NJ. pg.65 - 76, 1992.
16. Klimas, N.G., Morgan, R., Salvato, F., Flavia, Van Reil, Millon, C. and Fletcher, M.A. Chronic Fatigue Syndrome and Psychoneuroimmunology. In *Stress and Disease Progression: Perspectives in Behavioral Medicine*. Schneiderman, N., McCabe, P. and Baum, A., eds. Lawrence Erlbaum, Assoc., Hillsdale, NJ, P121-137, 1992.
17. Nash, M.S. and Fletcher, M.A., The Physiologic Perspective: Immune System, In. *Aging with Spinal Cord Injury*. Whiteneck, G.G., ed. Demos Publications, New York, pg. 159-181, 1992.
18. Antoni, M., Schneiderman, N., LaPerriere, A., Bourguignon, L. and Fletcher, M.A.. Psychoneuroimmunology and stress responses in HIV-1 seropositive and at-risk gay men. In *Stress and Disease Progression: Perspectives in Behavioral Medicine*. Schneiderman, N., McCabe, P. and Baum, A., eds. Lawrence Erlbaum, Assoc., Hillsdale, NJ, 139-163, 1992.
19. Antoni, M., Schneiderman, N., LaPerriere, A., O'Sullivan, M. and Fletcher, M.A.. Mothers with AIDS. in Ahmad, P. (ed). *Living and Dying with AIDS*. Plenum, N.Y. Pg. 45-86, 1992.
20. Klimas, N.G., Morgan, R., vanRiel, F. and Fletcher, M.A., Clinical Observations Regarding Use of an Anti-Depressant, Fluoxetine. in Chronic Fatigue Syndrome, In *Chronic Fatigue Syndrome*, P. Goodnik and N.G. Klimas, eds., American Psychiatric Press, Washington, D.C., p95-108, 1993.
21. Patarca, R., Klimas, N.G., and Fletcher, M.A. Immunological Correlates of Chronic Fatigue Syndrome. in Chronic Fatigue Syndrome, In *Chronic Fatigue Syndrome*, P. Goodnik and N.G. Klimas, eds., American Psychiatric Press, Washington, D.C., p1-22, 1993.
22. Fletcher, M.A., Morgan, R. and Klimas, N.G. Immunologic Consequences of Treatment for Drug Abuse. In Friedman, H. et al., eds. *Drugs of Abuse, Immunity and AIDS*, Plenum Press, New York, p241-246, 1993.
23. Schneiderman, N, Antoni, M, Fletcher, MA, Tronson, G, Klimas, N, Kumar, M and LaPerriere, A. Endocrine responses, immunity and HIV spectrum disease, In Friedman, et al., eds, *Drugs of Abuse, Immunity and AIDS*. Plenum Press, New York, 1993.
24. Klimas, N.G., Fletcher, M.A., Walling, J., Garcia-Morales, R., Patarca, R., Moody, D. and Ocarma, T. Ex vivo expansion, activation and re-infusion of CD8 T cells into donor with rIL-2 - a Phase 1 Study. in *Retroviruses of Human AIDS and Related Diseases*, Girard, R, M. and Valette, L., eds, in 8th Colloque des Cent Gardes., pg. 285-290, 1992.
25. Antoni, M, Esterling, B, Lutgendorf, S, Fletcher, MA, and Schneiderman, N. Psychosocial Stressors, herpes virus reactivation and HIV infection. In Stein, M and Baum, A, eds. *AIDS and Oncology: Perspectives in Behavioral Medicine*. Erlbaum, Hillsdale, NJ, 1995.
26. Schneiderman, N., Antoni, M., Ironson, G., Klimas, N.G., LaPerriere, A., Kumar, M., Esterling, B. and Fletcher, M.A.. HIV-1, Immunity and Behavior. in *Handbook of Human Stress and Immunity*. ed by Glaser, R. and Kiecolt-Glaser. Academic Press, Inc. New York, 1995.
27. Goodkin, K., Blaney, N., Tuttle, R., Lehman, J. Feaster, D., Burkhalter, J., Leeds, B., Mahmood, R., Baum M., Kumar, M. and Fletcher, M.A. The psychoneuroimmunological impact of bereavement and a support group in HIV-1 infection. In Goodkin, K., ed. *Psychoneuroimmunology: Stress, Mental Disorders and Health*. American Psychiatric Press, Inc., Washington, D.C. , 1995.

28. Ironson, G., Antoni, M., Schneiderman, N., LaPerriere, A., Klimas, N. and Fletcher, M.A. Stress Management interventions and psychosocial predictors of progression in HIV-1 infection. in K. Goodkin, ed. *Psychoneuroimmunology, Stress, Mental Disorders and Health*. American Psychiatric Press, Washington, D.C., 1995.
29. Lutgendorf, S., Antoni, M., Schneiderman, N., Ironson, G. and Fletcher, M.A. Psychosocial interventions and quality of life changes across the HIV spectrum. in Baum, A. and Dimsdale, J., eds. *Perspectives in Behavioral Medicine*. Erlbaum, Hillsdale, N.J. 205-239, 1995.
30. Schneiderman, N., Antoni, M., Ironson, G., Lutgendorf, S., Hurwitz, B., Klimas, N., LaPerriere, A and Fletcher, MA. Psychoneuroimmunology and HIV/AIDS. In Schedolowski, M and Tewes, U, eds. *Psychoneuroimmunology*, Spektrum Akademischer Verlag, Germany, 577-633, 1996.
31. Goodkin, K., Shapshak, P., Kumar, M. and Fletcher, M.A. Psychoneuroimmunology: Stress, Mental Disorders and Health. In *Progress in Psychiatry*. American Psychiatric Press, Inc. Washington, D.C., 1998.
32. Fletcher, M.A., Urban, R., Asthana, D., Walling, J., Friedlander, A. And J.B. Page. Lymphocyte proliferation in *Manual of Clinical Laboratory Immunology*, Rose, N., deMacario, E., Folds, J., Lane, H.C. and Nakamura, R., eds. ASM Press, Washington, D.C., p 313-319, 1997.
33. Patarca, R., Fletcher, M.A. and Podack, E. Cytolytic cell functions. in *Manual of Clinical Laboratory Immunology*, Rose, N., deMacario, E., Folds, J., Lane, H.C. and Nakamura, R., eds. ASM Press, Washington, D.C., p 296-303, 1997.
34. Patarca, R., Maher, K., Goodkin, K. and Fletcher, M.A. Cryopreservation of peripheral blood mononuclear cells in *Manual of Clinical Laboratory Immunology*, Rose, N., deMacario, E., Folds, J., Lane, H.C. and Nakamura, R., eds. ASM Press, Washington, D.C., p 281-286, 1997.
35. Fletcher, M.A., Ironson, G., Goodkin, K., Antoni, M., Schneiderman, N. and Klimas, NG. Stress and immune function in HIV-1 disease. In Workman, E. and Hubbard, J., eds. *Stress Medicine*. CRC Press, Boca Raton, FL, p229-242, 1998.
36. Fletcher, MA, Klimas, NG and Patarca, R. Cytotoxic Lymphocytes, Fink, G., ed in *Encyclopedia of Stress*, Academic Press, pg. 639-643, 2000.
37. Ironson, G, Antoni, M, Schneiderman, N, LaPierriere, A, Klimas, N and Fletcher, MA. Stress management interventions and psychosocial predictors of progression in HIV-1 infections. In Goodkin, K (Ed) *Psychoneuroimmunology, stress, mental disorders and health*. American Psychiatric Press, Washington, DC pp 317-356, 2000.
38. Ironson, G, Antoni, M, Schneiderman, N, Chesney, M, O'Cleirgh, C, Balbin, E, Greenwood, D, Lutgendorf, S, LaPierriere, A, Klimas, N and Fletcher, MA. Coping: Interventions for optimal disease management in HIV. In Chesney, M and Antoni, M (Eds) *Innovative Approaches to Health Psychology: Prevention and Treatment Lessons from AIDS*. American Psychological Association, Washington, DC, 167-196. 2002.
39. Maher, K, Klimas, NG and Fletcher, MA. Immunology of Chronic Fatigue Syndrome. In *Handbook of Chronic Fatigue Syndrome*. Jason, Fennell and Taylor, eds John Wiley and Sons, 1-38, 2003.
40. Klimas, N, Fletcher, MA, Maher, K and Lawrence, R. Psychoneuroimmunology and Fatigue. In *Fatigue as a Window to the Brain*, DeLuca, J, ed., MIT Press, 281-298, 2005.
41. Fletcher, MA, Klimas NG, Cytotoxic Lymphocytes. G. Fink, ed.. In *Encyclopedia of Stress*, 2<sup>nd</sup> edition, Academic Press, Oxford, 711-715, 2007

## VI. PUBLICATIONS (REFEREED JOURNAL ARTICLES)

1. Prager, M.D., Fletcher, M.A, and Efron, K.: Mechanisms of the Immunohematologic Effect of Papain and Related Enzymes. *J. Immunol.* 89:834,840, 1962.
2. Prager, M.D. and Fletcher, M.A: Mechanisms of the Effect of Trypsin on Specific

- Hemagglutination with Incomplete Anti-Rh Antisera. *Proc. Soc. Exptl. Biol. Med.* 111:722-725, 1962.
3. Prager, M.D. and Fletcher, M.A.: The Effect of Enzymatic Release of Sialic Acid From Human Erythrocytes on Rh Agglutinations. *J. Immunol.* 94:165-170, 1966.
  4. Prager, M.D., Soules, M. and Fletcher, M.A: Further Studies On The Mechanism Of The Effect of Enzymes on Erythrocyte Serology with Special Reference to Pronase. *Transfusion* 8:220-225, 1968
  5. Springer, G.F., Fletcher, M.A. and Pavlovskis, O.: Isolation and Characterization of Homogeneous Erythrocyte Glycoproteins with Blood Group - Virus and Endotoxin - Receptor activities. *Transplantation* 6:674-675, 1968.
  6. Springer, G.F., Schwick, G. and Fletcher, M.A: The Relationship of the Influenza Virus Inhibitory Activity of Glycoproteins to their Molecular Size and Sialic Acid Content. *Proc. Nat'l Acad. Sci.* 64:634-641, 1969.
  7. Fletcher, M.A and Woolfolk, B.J. Immunochemical Studies of Infectious Mononucleosis. I. Isolation and Characterization of Heterophile Antigens from Hemoglobin Free Stroma. *J. Immunol.* 107:842-853, 1971.
  8. Fletcher, M.A and Woolfolk, B.J.: Immunochemical Studies of Infectious Mononucleosis II. Sodium Dodecyl Sulfate Gel Electrophoresis of Membrane Glycoprotein Antigens. *Biochim. Biophys. Acta.* 278:163-174, 1972
  9. Klein, I., Fletcher, M.A and Levey, G.S.: Evidence for a Dissociable Glucagon Binding Site In A Solubilized Preparation of Myocardial Adenylate Cyclase. *J. Biol. Chem.* 248:5552-5554, 1973.
  10. Fletcher, M.A and Lo, T.M.: Immunochemical Studies of Infectious Mononucleosis III. Isolation and characterization of Heterophile Antibodies. *Clin. Exptl. Immunol.* 16:607-614, 1974.
  11. Levey, G.S., Fletcher, M.A., Klein, I., Ruiz, E. and Schenk, A: Characterization of I-131 Glucagon-binding In a Solubilized Preparation of Cat Myocardial Adenylate Cyclase: Further Evidence for a Dissociable Receptor Site. *J. Biol. Chem.* 249: 2665-2673, 1974.
  12. Fletcher, M.A and Lo, T.M.: Immunochemical Studies of Infectious Mononucleosis of Effect of Proteases on the Glycoprotein of Horse Erythrocytes. *Proc. Soc. Exptl. Biol. Med.* 145:1100-1105, 1974
  13. Hunter, S.J., Fletcher, M.A. and Bush, C.A.: Molecular Weight of the Major Acidic Glycoprotein of Horse Erythrocyte Membrane. *Arch. Biochem. Biophys.* 163: 581-588, 1974.
  14. Pope, R.M., Fletcher, M.A., Mamby, A., and Shapiro, R.: Rheumatoid Arthritis Associated with Hyperviscosity Syndrome and Intermediate Complex Formation. *Arch Int. Med.* 135:281, 1975.
  15. Fletcher, M.A and Lo, T.M.: Immunochemical Studies of Infectious Mononucleosis V. Isolation and Characterization of Glycoprotein from Goat Erythrocytes. *J. Immunol.* 117:722, 1976.
  16. Fletcher, M.A., Lo, T.M., Graves, W. and Robles, M.: Isolation of Plasma Membrane Glycoprotein from Bovine Thymocytes. *Biochim. Biophys. Acta.* 465 341-352, 1977.
  17. Fletcher M.A., Lo, T.M., Levey, B.A. and Graves, W.R.: Immunochemical Studies of Infectious Mononucleosis. VI. A Radioimmunoassay for the Detection of Infectious Mononucleosis Heterophile Antibody and Antigen. *J. Immunol. Meth.* 14:51-58, 1977.
  18. Fletcher, M.A, Lo, T.M. and Graves, W.R.: Immunochemical Studies of Infectious Mononucleosis. VII. Isolation and Partial Characterization of a Glycopeptide from Bovine Erythrocytes. *Vox Sang.* 33:150-163, 1977.
  19. Vesely, D.L., Graves, W.R., Lo, T.M., Fletcher, M.A. and Levey, G.S.: Isolation of a Guanylate Cyclase Inhibitor from the Balsam Pear (*Momordica charantia* var *abbreviata*). *Oncology* 34:105-109, 1977.
  20. Claflin, A.J., McKinney, E.C., and Fletcher, M.A.: the Dunning R3327 Prostate Adenocarcinoma In The Fischer-Copenhagen F Rat: A Useful Model for Immunologic Studies. *Oncology* 34: 105-109, 1977.
  21. Claflin, A.J., Vesely, D.L., Hudson, J.L., Bagwell, C.B., Lehotay, D.C., Lo, T.M., Fletcher, M.A., Block, N.L., and Levey, G.S.: Inhibition of Growth and Guanylate Cyclase Activity of an

- Undifferentiated Prostate Adenocarcinoma by an Extract of the Balsam Pear (*Momordica charantia* var *abbreviata*). *Proc. Natl. Acad. Sci.* 75:989-993, 1978.
22. Levey, B.A., Lo, T.M., Caldwell, K.E. and Fletcher, M.A.: A Latex Test for the Serodiagnosis of Infectious Mononucleosis. *J. Clin. Microbiol.* 11:256-262, 1980.
  23. Fletcher, M.A., Brunschwing, J.P., Lo, H., Caldwell, K.E. and Lo, T.M.: Biochemical and Morphological Properties of Bovine Erythrocyte Membrane Glycoproteins. *J. Cell. Biochem.* 19:157-170, 1982.
  24. Fletcher, M.A., Caldwell, K.E., Latif, Z.A., Cayer, M. and Claflin, A.J. Immunochemical Studies of Infectious Mononucleosis VIII. A Glycoprotein from Sheep Erythrocytes with Sialic Acid Dependent Receptor Properties. *J. Immunol.* 128:976-982, 1982
  25. Fletcher, M.A., Caldwell, K.E. and Latif, Z.A.: Immunochemical Studies of Infectious Mononucleosis IX. Heterophile Antigen Associated with a Glycoprotein from the Bovine Erythrocyte Membrane. *Vox Sang* 43:57-70, 1982.
  26. Caldwell, K.E., Cayer, M., Whitney, P.L. and Fletcher, M.A.: Immunochemical Studies of Infectious Mononucleosis. X. Characterization of a Glycoprotein from Horse Erythrocyte, Which Reacts with Paul-Bunnell Antibody. *Mol. Immunol.* 19: 779-791, 1982.
  27. Klimas, N.G., Caldwell, K.E., Whitney, P.L. and Fletcher, M.A.: Comparison of Receptor Properties of Erythrocyte Membrane Glycoproteins. *Devel. Comp. Immunol.* 5:765-774, 1982.
  28. Latif, Z.A. and Fletcher, M.A.: Immunochemical Studies of Infectious Mononucleosis. XI. Comparison of Antigens from the Erythrocyte Membranes of Four Mammalian Species. *Mol. Immunol.* 20:1-10, 1983.
  29. Fletcher, M.A., Caldwell, K.E., Saez, L. and Latif, Z.A.: Horse Erythrocyte Glycoprotein-Latex Reagent Which Reacts with Infectious Mononucleosis Heterophile Antibody. *J. Clin. Microbiol.* 16:307-313, 1982.
  30. Fletcher, M.A., Klimas, N.G., Latif, Z.A. and Caldwell, K.E.: Serodiagnosis of Infectious Mononucleosis with a Bovine Erythrocyte Glycoprotein. *J. Clin. Microbiol.* 18:495-499, 1983.
  31. Buessow, S., Caldwell, K.E., Fletcher, M.A. and Lopez, D.: Purified Membranes of Mammary Tumor Cells Elicit Biological Activities in vitro Assays of Cells Mediated Immunity. *J. Cancer Clin. Oncol.* 18:595-604, 1982.
  32. Kozlovskis, P.L., Claflin, A.J., Fletcher, M.A., McKinney, E.C. and Rubin, R.W.: Two-dimensional Electrophoresis of Membrane Glycoproteins from the R3327 Prostate Adenocarcinoma. *Cancer Res.*, 42:2748-2766, 1982.
  33. Scott, G.B., Fischl, M.A., Klimas, N.G., Fletcher, M.A., Dickinson, G. and Parks, W.P., : Mothers of Infants with AIDS: Evidence for Both Symptomatic and Asymptomatic Carriers. *JAMA* 253:363-366, 1985.
  34. Baron, G.A., Klimas, N.G., Fischl, M.A. and Fletcher, M.A.: Decreased Natural Killer Cell-Mediated Cytotoxicity Per Effector Cell. *Diag. Immunol.* 3:197-204, 1985.
  35. Fischl, M.A., Dickinson, G.M., Scott, G.B., Klimas, N.G., Fletcher, M.A. and Parse, W. Evaluation of Heterosexual Partners, Children and Household Contacts of Patients with the Acquired Immunodeficiency Syndrome (AIDS). *JAMA*, 257:640, 1987.
  36. Fletcher, M.A., Baron, G.A., Ashman, M.A. and Klimas, N.G. Use of Whole Blood Methods in Assessment of Immune Parameters in Immunodeficiency Syndromes. *Clin. Diag. Immunol.*, 5:69-81, 1987.
  37. DeMedina, M., Fletcher, M.A., Valledor, M.D., Ashman, M.A., Gordon, A.M. and Schiff, E.A., Serologic Evidence of Human Immunodeficiency Virus (HIV) Infection in Cuban Immigrants in 1980, *Lancet*, 2(8551):166, 1987.
  38. Perez, G.O., Pardo, V. and Fletcher, M.A. Renal Involvement in Essential Mixed Cryoglobulinemia. *Am. J. Kid. Dis.*, 10:276-280, 1987.
  39. Papic, M., Stein-Streilein, J., Zakarija, M., MacKenzie, J.M., Gufee, J. and Fletcher, M.A.: Suppression of Peripheral Blood Natural Killer Cells by Excess Thyroid Hormone. *J. Clin. Invest.* 79:406-408, 1987.

40. Fletcher, M.A., Adelsberg, B., Azen, S., Gjerset, G., Hassett, J., Kaplan, J., Niland, J., Odom-Maryon, T., Parker, J., Mosley, J. and the Transfusion Safety Study Group. Immunophenotyping in a Multicenter Study: The Transfusion Safety Study Experience. *Clin. Immunol. Immunopath.* 52:38-47, 1989.
41. Mantero-Atienza, E., Beach, R., Fletcher, M.A., van Reil, F., Morgan, R., Eisdorfer, C., Fordyce-Baum, M. Measures of nutritional status in early HIV infection. *Arch. AIDS Res.* 111:4, 275-285, 1989.
42. Millon, C., Salvato, F., Blaney, N., Morgan, R., Mantero-Atienza, E., Klimas, N.G. and Fletcher, M.A.: A Psychological Assessment of Chronic Fatigue Syndrome/Chronic Epstein-Barr Virus Patients. *Psychology and Health*, 3:131-141, 1989.
43. Lang, D.J., Kovacs, A.A.S., Zaia, J.A., Doelkin, G., Niland, J.C., Aledort, L., Azen, S., Fletcher, M.A., Gauderman, J., Gjerset, G.J., Lusher, J., Operskalski, E.A., Parker, J.W., Pegelow, C., Vyas, G.N., Mosley, J. and the Transfusion Safety Study Group. Seroepidemiologic Studies of Cytomegalovirus and Epstein-Barr Virus Infections in Relation to Human Immunodeficiency Virus Type 1 Infection in Selected Recipient Populations. *J. AIDS* 2:540-549, 1989.
44. Parker, J., Adelsberg, B., Boone, D., Fletcher, M.A., Gjerset, G., Kaplan, J., Niland, J., Odom-Maryon, T., Operskalski, E., Prince, H., Scott, D., Stites, D., Mosley, J. and the Transfusion Safety Study Group. Leukocyte Immunophenotyping by Flow Cytometry in a Multisite Study: Standardization, Quality Control and Normal Values in the Transfusion Safety Stud. *Clin. Immunol. Immunopath.* 55:187-220, 1990.
45. Berger, J.R., Sheremata, W., Resnick, L., Atherton, S., Fletcher, M.A. and Norenberg, M. Multiple Sclerosis-Like Illness in Association with Human Immunodeficiency Virus Infection. *Neurology*, 39:324-329, 1990.
46. Antoni, M., Schneiderman, N., Fletcher, M.A., Goldstein, D.A., LaPerriere, A. and Ironson, G. Psychoimmunology and HIV-1 Infection. *J. Consult. Clin. Psych.* 58:38-49, 1990.
47. Chitwood, D.D., McCoy, C.B., Inciardi, J.A., McBride, D.C., Comerford, M., Trapido, E., McCoy, V., Page, J.B., Fletcher, M.A. and Ashman, M.A. HIV Seropositivity of Needles from "Shooting Galleries" in Miami, Florida: Prevalence and Contagion Risk. *Am. J. Pub. Health.*, 80:150-152, 1990.
48. Ironson, G., LaPerriere, A., Antoni, M., O'Hearn, P., Schneiderman, N., Klimas, N.G. and Fletcher, M.A. Changes in Immune and Psychological Factors as a Function of Anticipation and Reaction to News of HIV-1 Antibody Status. *Psychosomatic Med.* 52:247-270, 1990.
49. Klimas, N.G., Morgan, R., Salvato, F. and Fletcher, M.A.: Immunologic Abnormalities of Chronic Fatigue Syndrome. *J. Clin. Microbiol.* 28:1403-1410, 1990.
50. Pflugfelder, S.C., Pepose, J., Fletcher, M.A., Klimas, N. G., Feuer, W. and Font, R.L. Epstein-Barr Virus Infection and Immune Dysfunction in Patients with Aqueous Tear Deficiency. *Ophthalmology.* 97:313-323, 1990.
51. LaPerriere, A., Antoni, M., Schneiderman, N., Ironson, G., Klimas, N.G., Caralis, P. and Fletcher, M.A. Exercise Intervention Attenuates Emotional Distress and Natural Killer Cell Decrements Following Notification of Positive Serologic Status for HIV-1. *Biofeedback and Self-Regulation* 15:229-242, 1990.
52. Klimas, N.G., Morgan, R., Blaney, N., Chitwood, D., Page, B., Milles, K and Fletcher, M.A.. Alcohol and Immune Function in HIV-1 Seropositive, HTLV-I/II Seronegative and Positive Men on Methadone. *Prog. Clin. Biol. Res.* 325:103-111, 1990.
53. Fischl, M.A., Uttamchandani, R.B., Resnick, L., Agarwal, R., Fletcher, M.A., Petrone, J., Dearmas, L., Chidekel, J., McCann, M. and Myers, M.: Phase I Study of Recombinant Human Interferon Alfa-2A or Human Lymphoblastoid Interferon Alfa-n1 and Zidovudine in the Treatment of Patients with AIDS-Associated Kaposi's Sarcoma. *J. AIDS* 4:1-10, 1990.
54. Page, J.B., Lai, S-H., Chitwood, D., Smith, P.J., Klimas, N. and Fletcher, M.A. HTLV-I/II Seropositivity and Mortality Due to AIDS in HIV-1 Seropositive IV Drug Users. *Lancet*, 335:1439-1441, 1990.

55. Antoni, M., August, S. LaPerriere, A. , Baggett, L., Klimas, N.G., Ironson, G., Schneiderman, N. and Fletcher, M.A. Psychological and Neuroendocrine Measures Related to Functional Immune Changes in Anticipation of HIV-1 Serostatus Notification. *Psychosomatic Med*, 52:496-510, 1991. 1990.
56. Donegan, E., Stuart, M., Niland, JC, Sacks, HS, Azen, S., Dietrich, S.L., Fletcher, M.A., Hagerty, C., Kleinman, S.H., Operskalski, E.A., Perkin,, H., Pindyck, J., Schiff, E.R., Stites, D. Tomasulo, P., Mosley, J. and the Transfusion Safety Study Group. Clinical Outcome and Laboratory Findings for Recipients of Blood Components from Donors Positive for Antibody to Human Immunodeficiency Virus Type 1 at the Time of Blood Donation. *Ann. Intern. Med.*, 113:733-739, 1990.
57. Wilkie, F.L., Eisdorfer, C., Morgan, R. Lowenstein, D. Fletcher, M.A., and Szapocznik, J. Cognition in Early Human Immunodeficiency Virus Infection. *Arch. Neurology* 47:433-440, 1990.
58. Fordyce-Baum, M.A., Mantero-Atienza, E., Shor-Posner, G., Fletcher, M.A., Morgan, R. Eisdorfer, C. Sauberlich, H.E., Cornwell, P.E. and Beach, R. Association of Vitamin B6 Status with Parameters of Immune Function in Early HIV Infection. *J. AIDS*. 4:1122-1132, 1991.
59. Matero-Atienza, E., Baum, M.K., Morgan, R., Wilkie, F., Shor-Posner, G., Fletcher, M.A., Eisdorfer, C. and Beach, R. Vitamin B<sub>12</sub> in Early Human Immunodeficiency Virus-1 Infection. *Arch. Intern. Med.* 151:1019-1020, 1991.
60. Klimas, N.G., Blaney, N., Morgan, R., Chitwood, D., Milles, K., Lee, H. and Fletcher, M.A. Immune Function and Anti-HTLV-I/II Status in Anti-HIV-1 Negative IV Drug Users in Methadone Treatment. *Amer. J. Med.*, 1991.
61. Mantero-Atienza, E., Baum, M.K., Morgan, R., Wilkie, F., Shor-Posner, G., Fletcher, M.A., Eisdorfer, C. and Beach, R.S. Vitamin B12 in early human immunodeficiency virus type 1 infection. *Arch. Int. Med.* 151:1019-1020, 1991.
62. Antoni, M., LaPerriere, A., Ironson, G., Klimas, N.G., Schneiderman, N. and Fletcher, M.A. Disparities in Psychological, Neurological and Immunological Responses in Asymptomatic HIV-1 Seronegative and Seropositive Gay Men. *Biol. Psychiatry*, 29:1021-1043, 1991.
63. LaPerriere, A., Fletcher, M.A., Antoni, M., Klimas, N.G. and Schneiderman, N. Aerobic Exercise Training in an AIDS Risk Group. *Int. J. Sports Med.*, 12:S53-S57, 1991.
64. Antoni, M.H., LaPerriere, A., Schneiderman, N. and Fletcher, M.A. Stress and Immunity in individuals at Risk for AIDS. *Stress Med.* 7: 35-44, 1991.
65. Antoni, M., Baggett, L., LaPerriere, A., August, S., Ironson, G., Klimas, N., Schneiderman, N., Fletcher, M.A. Cognitive Behavioral Stress Management Buffers Distress Responses and Elevates Immunologic Markers Following Notification of HIV-1 Seropositivity. *J. Consulting Clin. Psychol.* 59:906-915, 1991.
66. Klimas, N.G., LaPerriere, A., Ironson, G., Simoneau, J., Caralis, P., Schneiderman, N. and Fletcher, M.A. Evaluation of Immunologic Function in a Cohort of HIV-1 Positive and Negative Healthy Gay Men. *J. Clin. Micobiol.* 29:1413-1421, 1991.
67. Klimas, N.G., Patarca, R., Perez, G., Garcia-Morales, R., Schultz, D., Schabel, J. and Fletcher, M.A. Distinctive Immune abnormalities in a Patient Presenting with Procainamide-Induced Lupus and Serositis. *Amer. J. Med. Sci.* 303:99-104, 1992.
68. Fletcher, M.A., Donegan, E., Stevens, C.E., Schiff, E.R., Dietrich, S.L., Hassett, J., Parker, J., Operskalski, E.A., Mosley, J. and the Transfusion Safety Study Group. Lymphocyte Phenotypes among Anti-HTLV-I/II Positive Donors and Recipients. *J. AIDS* 4:628-632, 1991.
69. Klimas, N.G. and Fletcher, M.A. Chronic Fatigue Syndrome. *JAMA*, 16;265(3):357-8, 1991.
70. Klimas, N.G., Blaney, N., Morgan, R. and Fletcher, M.A. Methadone and Immune Function, *Amer. J. Med.*, 92:114-115, 1991.
71. Mantero-Atienza, E., Gavancho-Sototmeyer, M.C., Shor-Posner, G., Fletcher, M.A., Sauberlich, H., Beach, R. and Fordyce-Baum, M.K. Selenium Status in Asymptomatic HIV-1 Seropositive Men. *Nutr. Res.* 11:1236-1250, 1991.
72. Baum, M.K., Javier, J.J., Mantero-Atienza, E., Beach, R., Fletcher, M.A., Sauberlich, H.E.,

- Feaster, D., Shor-Posner, G., Zidovudine-associated adverse reactions in a longitudinal study of asymptomatic HIV-1 infected homosexual males. *J. AIDS* 4:1218-1226, 1991.
73. Gjerset, G. and Fletcher, M.A. Measurement of T- and B-Cell Function. *Clin. Immunol. Newsletter*. 10:186-191, 1991.
  74. Fletcher, M.A., Gjerset, G.J., Hassett, J., Kaplan, J., Parker, J., Donegan, E., Mosley, J. and the Transfusion Safety Study. Effect of Age on HIV-1 Induced Changes in Lymphocytes Populations among Persons with Congenital Clotting Disorders. , *Blood*, 80:831-840, 1992.
  75. Skyler, J.S., Rabinovitch, A., Agramonte, R., Lohman, V., Reeves, M.L., Goldberg, R.B., Shienvold, F.L., Esquenazi, V., Fletcher, M.A., Palmberg, P.F., Mintz, D.H., Ashby, M., Sumowski, W., Rathjens, M., Miceli, G., Winter, D., Winslow, C., et al Cyclosporine in recent onset type I diabetes mellitus. Effects on islet  $\beta$  cell function. *Journal of Diabetes and its Complications* 6 (2), pp. 77-88, 1992.
  76. Goodkin, K., Blaney, N., Feaster, D., Fletcher, M.A., Klimas, N.G., Morgan, R., Millon, C. and Szapocznik, J. Psychosocial Factors are Associated with NK Activity in Asymptomatic HIV-1 Seropositive Homosexual Men. *J. Psychosom. Res.* 36:635-650., 1992.
  77. Schneiderman, N., Antoni, M., Ironson, G., LaPerriere, A. and Fletcher, M.A. Applied Psychosocial Science and HIV-1 Spectrum Disease. *J. Appl. Prevent. Psychol.*1:67-82, 1992.
  78. Patarca, R., Perez, G., Gonzales, A., Garcia-Morales, R., Gamble, R., Klimas, N and Fletcher, M.A. Comprehensive Evaluation of Acute Immunologic Changes Induced by Cuprophane and Polysulfone Membranes in a Patient on Chronic Hemodialysis. *Amer. J. Neph.* 97: 12:274-278, 1992.
  79. Solomon, GF, Benton, D, Harker, J. Bonavida, B. and Fletcher, M.A. Prolonged Asymptomatic States in HIV-Seropositive Persons with 50 CD4+ T-Cells/mm<sup>3</sup> : Preliminary findings. *J. AIDS* 6:1173-4, 1993
  80. Klimas, N.G., Page, J.B., Patarca, R., Chitwood, D., Morgan, R. and Fletcher, M.A. Effects of retroviral infections on immune function in African-American intravenous drug users *AIDS* 7:331-335, 1993.
  81. Patarca, R. and Fletcher, M.A. Ring-finger Motif in the Peroxisome Assembly Factor-1. *FEBS Letters*, 312:1-2, 1993.
  82. Patarca R., Fletcher, M.A. and Cantor, H. Structural Features of Two T-Cell-Specific Genes That Suggest a Potential Role in HTLV-1-Associated Pathology. *AIDS Res. Human Retrovir.* 9:105-107, 1993.
  83. Shor-Posner, G., Basit, A., Lu, Y., Cabrejos, C., Peck, M., Chang, J., Fletcher, M.A., Mantero-Atienza, E. and Baum, M.K. Hypocholesteremia is Associated with Immune Dysfunction in Early HIV-1 Infection. *Amer. J. Med.* 94:515-519, 1993.
  84. Peck, M., Mantero-Atienza, E., Miquez-Burbano, M., Fletcher, M.A., Shor-Posner, G. and Baum, M. The Esterified Plasma Fatty Acid Profile is Altered in Early HIV-1 Infection. *Lipids*, 28:593-597, 1993.
  85. Hassett, J., Gjerset, G., Mosley, J., Fletcher, M.A., Donegan, E., Parker, J., Counts, R., Aledort, L., Lee, H., Pike, M.C. and the Transfusion Safety Study Group. Effect of Multiple Transfusions on Lymphocyte Subpopulations in Anti-HIV-1 Negative Persons. *Blood*, 82:1351-1357, 1993
  86. Fletcher, M.A., Klimas, N.G., Morgan, R.O. Immune function and drug treatment in anti-retrovirus negative intravenous drug users. *Adv. Exp. Med. Biol.* 335:241-246., 1993.
  87. Fletcher, M.A. Ex Vivo Expansions of CD8 T Cells. *Clin. Immuno. Newsletr.*14:85, 1994,
  88. Schneiderman, N, Antoni, M., Fletcher, M.A., Ironson, G., Klimas, N., Kumar, M., LaPerriere, A. Stress, endocrine responses, immunity and HIV-1 spectrum disease. *Adv. Exp. Med. Biol.* 335:225-234, 1993.
  89. Patarca, R., Klimas, N.G., Lugtendorf, S, Antoni, M. and Fletcher, M.A. Dysregulated Expression of Tumor Necrosis Factor in the Chronic Fatigue Immune Dysfunction Syndrome. Interrelationship with Cellular Sources and Soluble Immune Mediator Expression Patterns. *Clin.*

Inf. Dis.18(suppl):S147-53, 1994.

90. Ironson, G., Klimas, N.G., Antoni, M., Freidman, A., Simoneau, J., LaPerriere, A., Baggett, L., August, S., Arevalo, F., Schneiderman, N. and Fletcher, M.A. Distress, Denial and Low Adherence to Behavioral Interventions Predict Faster Disease progression in Gay Men Infected with Human Immunodeficiency Virus. *Intl. J. Behav. Med.* 1:90-105, 1994.
91. LaPerriere, A., Ironson, G., Antoni, M., Schneiderman, N., Klimas, N. and Fletcher, M.A. Exercise and Psychoneuroimmunology Med.& Sci. in Sports & Exercise. 26:182-190, 1994.
92. Klimas, N.G., Patarca, R., Maher, K., Smith, M., Jin, X., Huang, H., Walling, J., Gamber, C. and Fletcher, M.A., Immunomodulation with autologous, ex vivo manipulated cytotoxic T lymphocytes in HIV disease. *Clin. Immuno. Newsletter.* 14:85-89, 1994.
93. Antoni, MH, Brickman, A, Lutgendorf, S., Klimas, N., Imia-Fins, A., Ironson, G., Quilliam, R., Miquez, MJ, VanRiel, F., Morgan, R., Partarca, R. and Fletcher, M.A. Psychosocial correlates of illness burden in chronic fatigue syndrome. *Clin. Inf. Dis.* 18(suppl):S1-6, 1994.
94. LaPerriere A, Klimas N, Fletcher MA, Perry A, Ironson G, Perna F, Schneiderman N. Change in CD4+ cell enumeration following aerobic exercise training in HIV-1 disease: possible mechanisms and practical applications. *Int J Sports Med.* 18 Suppl 1:S56-61, 1997.
95. Gjerset, G.J., Pike, M.C., Mosley, J., Hassett, J., Fletcher, M.A., Donegan, E., Parker, J., Counts, RB, Zhou, Y., Kasper, C., and the Transfusion Safety Study Group. Effect of low and intermediate –purity clotting factor therapy on progression of human immunodeficiency virus infection in congenital clotting disorders. *Blood* 84:1666-1671, 1994.
96. Esterling. B., Antoni, M., Fletcher, M.A., Marguilles, S. and Schneiderman, N. Emotional disclosure through writing or speaking modulates latent Epstein-Barr virus reactivation. *J. Consulting and Clin. Psych.* 62:130-140, 1994.
97. Ironson, G., Schneiderman, N., Kumar, M., Antoni, M., LaPerriere, A., Klimas, N. and Fletcher, M.A. Psychosocial stress, endocrine and immune response in HIV-1 disease. *Homeostasis.* 35:137-148, 1994.
98. LaPerriere, A., Ironson, M., Antoni, M., Klimas, N., Schneiderman, N. and Fletcher, M.A. Aerobic exercise effects on immune status in HIV-1 infected gay men. *Int. J. Sports Med.* 15:S127-S130, 1994.
99. Lutgendorf, S, Antoni, M., Schneiderman, N. and Fletcher, M.A. Psychosocial counseling to improve quality of life in HIV-infected men. *Patient Education and Counseling.* 24:217-35, 1994.
100. Klimas, N.G., Walling, J., Patarca, R., Garcia-Morales, R., Moody. D., Ocarma, T. and Fletcher, M.A. Clinical and Immunologic in AIDS Patients Following Adoptive Therapy with Activated CD8+ T Cells and Interleukin-2 Infusion. *AIDS* 8:1073-1081, 1994.
101. Keller, R, Lane, J., Klimas, N.G., VanReil. F. and Fletcher, M.A., HLA/DR distributions in South Florida Patients with a Diagnosis of Chronic Fatigue Syndrome., *Clin. Inf. Dis* 18(suppl);S154-157, 1994.
102. Bologna, R., Shor-Posner, G., Indacocchea, F., Mantero-Atienza, e., Graziutti, M., Sotomayer, M-C., Fletcher, M.A., Cabrejos, C., Scott, G. and Baum, M. Selenium Status and Immunity in HIV-1 Infected Pediatric Patients, *J. Nutritional Immun.*, 3:41-49, 1994.
103. Goodkin, K., Mulder, C., Blaney, N., Ironson, G., Kumar, M. and Fletcher, M.A. Psychoneuroimmunology and HIV-1 infection revisited. *Arch. Gen. Psych.* 51:246-247, 1994.
104. Patarca, R., Klimas, N.G., Walling, J., Mayer, V., Baum, M., Yue, X., Garcia, M., Pons, H., Page, B.J., Lai, S., and Fletcher, M.A. CD8 T cell immunotherapy in AIDS: rationale and lessons learned at the cellular and molecular biology level. *Clin. Immuno. Newslett.* 14:89-95, 1994.
105. Solomon, G.F., Benton, D. Harker, J.O, Bonivida, B. and Fletcher, M.A. Prolonged Asymptomatic states in HIV-seropositive persons with fewer than 50 CD4+ cells per mm3. *Ann. NY Acad Sci.* 741:185-190, 1994.
106. Shor-Posner, G., Mizuez-Burbano, M.J., Lu Y., Feaster, D., Fletcher, M.A., Sauberlich, H. and Baum, M.A. Elevated IgE level in relationship to nutritional status and immune parameters in early HIV-1 disease. *Allergy.* 95:886-892, 1995.

107. Lutgendorf, S., Klimas, N.G., Antoni, M., Brinkman, A., Patarca, R. and Fletcher, M.A. Relationships of Cognitive Difficulties to Immune markers. Depression and Illness burden in Chronic Fatigue Syndrome. *J Chronic Fatigue Syndrome*, 1:23-42, 1995.
108. Patarca, R., Klimas, N.G., Garcia, M.N., Walters, M.J., Dombroski, D., Pons, H. and Fletcher, M.A. Dysregulated expression of soluble immune mediator receptors in a subset of patients with chronic fatigue syndrome: cross-sectional categorization of patients by immune status. *J. Chronic Fatigue Syn.*, 1:81-96, 1995.
109. Antoni, M, Goldstein, D, Ironson, G, LaPerriere, A, Fletcher, MA. And Schneiderman, N. Coping responses to HIV serostatus notification predict concurrent and prospective immunologic status. *Clin Psych. Psychotherapy* 2:234-248. 1995.
110. Klimas, N.G. and Fletcher, M.A. Chronic fatigue syndrome. *Curr. Opin. Inf. Dis.* 8:145-148, 1995.
111. Miguez-Burbano, M.J., Shor-Posner, G., Fletcher, M.A. , Moerno, J.N., Carcamo, C., Page, J.B., Quesada, J., Sauberlich, H. and Baum, M. Immunoglobulin E levels in relationship to HIV-1 disease, route of infection and vitamin E status. *Allergy* 50:157-161, 1995.
112. Baum, M., Shor-Posner, G., Fletcher, M.A., Lu, Y., Moreno, J., Cacamo. C., Page, J.B., Quesada, J., Sauberlich, H. and Baum, M. Micronutrients and HIV-1 disease progression. *AIDS* 9:1051-1056, 1995.
113. Patarca, R., Klimas, N.G., Walling, J., Sandler, D., Friedlander, A., Jin, X.Q., Garcia, M.N. and Fletcher, M.A.. Adoptive CD8+ T-cell immunotherapy of AIDS patients with Kaposi's sarcoma. *Crit. Rev. Oncogenesis*. 6:179-234, 1995.
114. Patarca, R. and Fletcher, M.A. Effects of benzalkonium salts on eucaryotic and microbial G-protein-mediated processes and surface membranes. *Crit. Rev. Oncogenesis*. 6:327-356, 1995.
115. Lutgendorf, S.K., Antoni, M., Ironson, G., Fletcher, M.A., Penedo, F., Baum, A., Schneiderman, N., and Klimas, N.G. Physical symptoms of chronic fatigue syndrome are exacerbated by the stress of hurricane Andrew. *Psychosomatic Med.* 57:310-323, 1995.
116. Patarca, R., Sandler, d., Walling, J., Klimas, N.G. and Fletcher, M.A. Assessment of immune mediator expression levels in biological fluids and cells: a critical appraisal. *Crit. Rev, Oncogenesis*. 6:117-149, 1995.
117. Goodkin, K., Fletcher, M.A. and Cohen, N. Clinical aspects of psychoneuroimmunology. *Lancet* 345:183-4, 1995.
118. Patarca R. and Fletcher, M.A. Structure and pathophysiology of the erythrocyte membrane-associated Paul-Bunnell heterophile antibody determinant in Epstein-Barr virus -associated disease. *Crit. Rev. Oncogenesis* 6:305-326, 1995.
119. Starr, K.R., Antoni, M., Hurwitz, B.E., Rodriquez, M.R., Ironson, G., Fletcher, M.A., Kumar, M., M., Patarca, R., Lutgendorf, S., Quillian, R.E., Klimas, N. and Schneiderman, N. Patterns of Immune, neuroendocrine and cardiovascular stress responses in asymptomatic human immunodeficiency virus seropositive and seronegative men. *Int. J. Behavioral Med.* 3:135-162, 1996.
120. Patarca, R., Klimas, N.K., Sandler, D., Garcia, M.N. and Fletcher, M.A. Interindividual immune status variation patterns in patients with chronic fatigue syndrome: association with the tumor necrosis factor system and gender. *J Chronic Fatigue Syn.* 2:13-39, 1996.
121. Ironson, G., Field, T., Scafidi, Kumar, M., Patarca, R., Proce, A., Goncalves, A., Hashimoto, M., Kumar, A., Burman, I., Tetenman, C. and Fletcher, M.A. Massage therapy is associated with enhancement of the immune systems' cytotoxic potential. *Int. J. Neurosci.*, 84:205-217, 1996.
122. Page, B., Lai, S., Fletcher, M.A., Patarca, R., Smith, P., Lai, H.C. and Klimas, N.G. Predictors of survival in HIV-1 seropositive intravenous drug users. *J Clin. Diag. Lab. Immunol*, 3:51-60, 1996.
123. Goodkin, K., Feaster, D., Tuttle, R., Blaney, N., Kumar, M., Baum, M., Shapshak, P., and Fletcher, M.A. Bereavement is associated with time-dependent decrements in cellular immune function in asymptomatic human immunodeficiency virus type 1-seropositive homosexual men.

- J.Clin. Diag. Lab. Immunol. 3:109-118, 1996.
124. Patarca, R., Friedlander, A., Harrington, W., Cabral, L., Byrnes, J. and Fletcher, M.A. Peripheral blood T cell subsets as prognostic indicators of chemotherapy outcomes in AIDS patients with large cell lymphoma. *AIDS Res Human Retroviruses*. 12: 645-649, 1996.
  125. Patarca, R., Sandler, D., Maher, K., Hutto, C., Martin, N.L., Klimas, N.G., Scott, G., and Fletcher, M.A. Immunological correlates of disease severity in pediatric slow processors with human immunodeficiency virus type-1 infection. *AIDS and Human Retroviruses*. 12:1063-1068, 1996.
  126. DeGasperi, R., Gama-Sosa, M., Patarca, R., Battistini, S., Raghavan, S., Kowall, E.H., Harrington Smith, K., Fletcher, M.A., and Kolodny, E.H. Intrathecal synthesis of antisulfatide IgG is associated with peripheral nerve disease in the acquired immunodeficiency syndrome. *AIDS Res Human Retroviruses*, 12:205-11, 1996.
  127. Goodkin, K., Blaney, N., Tuttle, R., Nelson, R.H., Baldewicz, T., Kumar, M., Fletcher, M.A., Leeds, B. and Feaster, D. Bereavement and HIV infection. *Internatl. Rev. Psych.* 8:201-216, 1996.
  128. Patarca, R. and Fletcher, M.A., Pteridines and neuroimmune function and pathology. *J Chronic Fatigue Syndrome*, 3:69-86, 1997.
  129. Ironson, G., Wyings, C., Schneiderman, N., Baum, A., Rodriguez, M., Greenwood, D., Benight, C., Antoni, M., LaPerriere, A., Huang, H-S., Klimas, N.G., and Fletcher, M.A. Post-traumatic stress symptoms, intrusive thoughts, loss and immune function after Hurricane Andrew. *Psychosomatic Med.* 59:128-141, 1997.
  130. Patarca, R and Fletcher, MA. Interleukin-1: Basic science and clinical applications. *Crit. Rev Oncogenesis* 8:143-199, 1997.
  131. Benight C, Antoni M, Kilbourn K, Ironson G, Kumar M, Fletcher M A, Redwine L, Baum A, Schneiderman N. Coping self-efficacy buffers psychological and physiological disturbances in HIV-infected men following a natural disaster. *Health Psych.* 16: 248-55, 1997.
  132. Lutgendorf, S., Antoni, M., Ironson, G., Klimas, N., Kumar, M., Starr, K., McCabe, P., Clevens, K., Fletcher, M.A., Schneiderman, N. Cognitive-behavioral stress management decreases dysphoric mood and herpes simplex virus-type 2 antibody titers in symptomatic HIV-1 seropositive gay men. *J. Clin. Consult. Psychol.* 65: 31-43, 1997.
  133. Baum, M.K., Shor-Posner, G., Zhang, G., Lai, H., Fletcher, M.A., Sauberlich, H. and Page, J.B. Risk of HIV-related mortality is associated with selenium deficiencies. *J Acquir Immune Defic Syndr Hum Retrovirol* 15:370-374, 1997.
  134. Baum, M.K., Shor-Posner, G., Lai, S., Zhang, G., Lai, H., Fletcher, M.A., Sauberlich, H. and Page, J.B. HIV-1 infection in women is associated with severe nutritional deficiencies. *J Acquir Immune Defic Syndr Hum Retrovirol* 16:272-278, 1997.
  135. Lutgendorf, S, Antoni, M, Ironson, G, Klimas, N, Fletcher, MA, Schneiderman, N. Cognitive processing style, mood and immune function following HIV seropositivity notification. *Cognitive Therapy and Research* 21:157-184, 1997.
  136. Gama Sosa, M.A., De Gasperi, R., Patarca, R., Fletcher, M.A., Kolodny, E.H. Antisulfatide IgG antibodies recognize HIV proteins. *J Acq. Immun. Deficienc. Syn. & Human Retroviruses*. 15:83-84, 1997.
  137. Miguez-Burbano, M.J., Hutto, C., Shor-Posner, G., Lopez, V., Lai, H., Fletcher, M.A., Baum, M.K. IgE-based assay for early detection of HIV-1 infection in infants. *Lancet* 350:782-3, 1997.
  138. LaPerriere A, Klimas, N, Fletcher, MA, Perry A, Ironson, G, Perna F and Schneiderman, N. Change in CD4+ cell enumeration following aerobic exercise training in HIV disease: possible mechanisms and practical applications. *Int J Sports Med* 18: suppl 1: S51-61, 1997.
  139. Patarca, R. and Fletcher, M.A. Interleukin-6 and disease: Two case reports that point to the usefulness of measuring cytokines in clinical settings. *J Chronic Fatigue Syn.* 4:53-69, 1998.
  140. Goodkin, K, Feaster, D.I., Ashtana, D., Blaney, N., Kumar, M., Baldewicz, T., Tuttle, R., Maher, K., Baum, M., Shapshak, P., and Fletcher, M.A.. A bereavement support group intervention is

- longitudinally associated with salutary effects on CD4 count and number of physician visits. *Clin. Diag. Lab. Immunol.* 5:382-391, 1998.
141. Byrnes, D.M., Antoni, M., Goodkin, K., Efantis-Porter, J, Asthana, D., Simon, T., Masajj, J., Ironson, G, Fletcher, MA Psychosocial factors, NKCC and cytotoxic/suppressor T-cells in HIV+ black women at risk for cervical cancer. *Psychosomatic Med.* 60: 714-722, 1998.
  142. Wilkie F L; Goodkin K;Eisdorfer C;Feaster D;Morgan R; Fletcher M A;Blaney N;Baum M;Szapocznik J. Mild cognitive impairment and risk of mortality in HIV-1 infection. *J Neuropsych Clin Neurosci.* 10: 125-32,1998.
  143. Lutgendorf S K; Antoni M H; Ironson G; Starr K; Costello N; Zuckerman M; Klimas N; Fletcher M A; Schneiderman N. Changes in cognitive coping skills and social support during cognitive behavioral stress management intervention and distress outcomes in symptomatic human immunodeficiency virus (HIV)-seropositive gay men. *Psychosomatic Med.* 60: 204-14,1998.
  144. Wallis, R.S., Lederman, H.M., Spritzler, J., Devers, J.L., Georges, D., Weinberg, A., Stehn, S., Lederman, M.M., Bucy, R.P., Craiu, A., Dinarello, C., Fahey, J., Fletcher, MA., Mizrachi, Y., Reuben, J., Siegel, J., Wade, M., Pahwa, S. Measurement of induced cytokines in AIDS clinical trials using whole blood: A preliminary report. *Clin Diag Lab Immunol* 5: 556-560, 1998.
  145. Perna, F., LaPerriere, A, Klimas, N., Ironson, G., Perry, A., Pacone, J, Goldstein, A., Majors, P., Makemson, D., Schneiderman, N, Fletcher, M.A., Mijeer, O., Koppes, L. Cardiopulmonary and CD4 cell changes in response to exercise training in early HIV infection. *Med Sci Sports Exercise*, 31:973-979, 1999.
  146. Cruess, D, Antoni, M, Kumar, M, , Ironson, G, McCabe, P, Fernandez, J, Fletcher, MA and Schneiderman, N. Cognitive behavioral stress management intervention buffers decreases in DHEA-S and increases in cortisol/DHEA-S ratio and reduces mood disturbance and perceived stress among HIV seropositive men. *Psychoneuroimmunology*, 24:537-49, 1999.
  147. Maher, K., Klimas, NG, Fletcher, MA, Cohen, V, Maggio, CM, Triplett, J, Valenzuela, R and Dickinson, G. Disease progression, adherence and response to protease inhibitor therapy of human immunodeficiency virus infection in an urban veterans affairs medical center. *JAIDS*, 22:358-363, 1999.
  148. Antoni, M.H., Cruess, S., Cruess, D.G., Kumar, M., Lutgendorf, S., Ironson, G., Dettmer, E; Williams J; Klimas N; Fletcher, M.A., Schneiderman N. Cognitive-behavioral stress management reduces distress and 24-hour urinary free cortisol output among symptomatic HIV-infected gay men. *Ann Behav Med* 22(1):29-37, 2000.
  149. Antoni, M.H., Cruess, D.G., Cruess, S., Lutgendorf, S., Kumar, M., Ironson, G., Klimas, N., Fletcher, M.A., Schneiderman, N. Cognitive-behavioral stress management intervention effects on anxiety, 24-hr urinary norepinephrine output, and T- cytotoxic/suppressor cells over time among symptomatic HIV-infected gay men. *J Consult Clin Psychol* 68(1):31-45, 2000.
  150. Cruess S, Antoni, M, Cruess D, Fletcher, MA, Ironson, G, Kumar, M, Lutgendorf S, Hayes A, Klimas and Schneiderman, N. Reductions in herpes simplex virus type 2 antibody titers after cognitive behavioral stress management and relationships with neuroendocrine function, relaxation skills and social support in HIV-positive men. *Psychosomatic Med.* 62:828-37, 2000.
  151. Patarca R, Rosenzweig J, Zuniga A, and Fletcher MA Effects of benzalkonium salts on prokaryotic and eukaryotic G-protein mediated processes. *Critical Reviews in Oncogenesis* 11(3/4):255-305, 2000.
  152. Shor-Posner, G, Campa, A, Zhang, G, Persaud, N, Miquez-Burbano, MJ, Quesada, J, Fletcher, MA, Page, J, Baum, M. When obesity is desirable: a longitudinal study of the Miami HIV-1-infected drug users (MIDAS) cohort. *JAIDS* 23:81-8, 2000.
  153. Patarca, R, Mark, T, Fletcher, MA and Klimas, NG. Immunology of chronic fatigue syndrome. *J Chronic Fatigue Syndrome* 6: 69-107, 2000.
  154. Fletcher, M.A., Miguez-Burbano, M.J., Shor-Posner, G., Lopez, V., Lai, Hong and Baum, M. Diagnosis of human immunodeficiency virus infection using an immunoglobulin E-based assay. *Clin Diag Immunol* 7: 55-57, 2000.

155. Cruess, S.E., Klimas, N., Antoni, M.H., Helder L., Maher, K., Keller, R., and Fletcher, M.A. Immunologic status correlates with severity of physical symptoms and perceived illness burden in chronic fatigue syndrome patients. *J Chronic Fatigue Syndrome* 7(1):39-52, 2000.
156. Fletcher, MA, Maher, K, Patarca, R, Klimas, N. Comparative analysis of lymphocytes in lymph nodes and peripheral blood of patients with chronic fatigue syndrome. *J Chronic Fatigue Syndrome*. 7:65-75, 2000.
157. Hurwitz BE, Brownley KA, Fletcher MA, Klimas NG. Chronic fatigue syndrome: evidence supporting the hypothesis of a behaviorally-activated neuromodulator of fatigue. *J Chronic Fatigue Syndr*. 6:45-63, 2000.
158. Klimas, N, Patarca, R, Maher, K, Smith, M. and Fletcher, MA. Clinical and immunologic effects of autologous lymph node transplant in chronic fatigue syndrome. *J Chronic Fatigue Syndrome*, 8:39-55, 2001.
159. Patarca, R, Klimas, N.G. and Fletcher, M.A. Immunotherapy of chronic fatigue syndrome: Therapeutic interventions aimed at modulating the Th1/Th2 cytokine expression balance. *J Chronic Fatigue Syndrome*. 8: 3-37, 2001.
160. Patarca-Montero, R, Antoni, M, Fletcher, MA and Klimas, N. Cytokine and other immunologic markers in chronic fatigue syndrome and their relationship to neuropsychological factors. *Applied Neuropsychiatry*, 8:51-62, 2001.
161. Ironson, G. Balbin, E., Solomon, G., Schneiderman, N., Fahey, J and Fletcher, MA. Preservation of natural killer cell cytotoxicity and number in healthy AIDS patients with low CD4 counts. *AIDS*, 15:2065-2073, 2001.
162. Patarca, R, Isava, A, Campo, R, Rodriguez, N, Nunez, E, Alter, M, Marchette, M, Sanabia, M, Mitchell, C, Rivera, D, Scott, G, Jayaweera, D, Moreno, J, Boulanger, C, Kolber, M, Mask, C, Sierra, E, Vallejo, R, Page, J, Klimas, N and Fletcher, MA. Human immunodeficiency virus type 1 (HIV-1) pharmacogenomics in clinical practice: Relevance of HIV-1 drug resistance testing. *Critical Rev Oncol*. 21:47-106, 2001.
163. Miles, S.A., Dezube, B., Lee, J.Y, Fletcher, M.A., Saville, M.W., Kaplin, L., Groopman, J., Scahhen, D.T., Cooley, T., Krown, S., Van Roemn, J., Friedman-Kien, A. for the AIDS Malignancy Consortium Anti-tumor activity of oral 9-cis Retinoic acid in HIV infected Patients with Kaposi sarcoma: A multicenter trial of the AIDS Malignancy Consortium. *AIDS*. 16:421-9, 2002.
164. Patarca, R. and Fletcher, M.A. The Paul-Bunnell heterophile antibody determinant in Epstein-Barr virus-associated disease. *J Chronic Fatigue Syndrome* 10: 51- 86, 2002.
165. Fletcher, MA, Maher, K and Klimas, NG. Natural killer cell function in chronic fatigue syndrome. *Clin Appl Immunol Rev*. 2:129-139, 2002.
166. Brownley, KA, Milanovich JR, Motivala SJ, Schneiderman N, Fillion L, Graves JA, Klimas, NG, Fletcher, MA and Hurwitz BE. Autonomic and cardiovascular function in HIV spectrum disease: early indications of cardiac pathophysiology. *Clin Autonomic Res*. 11:319-326, 2001.
167. Patarca, R. and Fletcher, M.A. Effects of Benzalkonium salts on G- protein-mediated processes and surface membranes: Relevance to microbial and chemical-induced diseases. *J Chronic Fatigue Syndrome*. 10:87-168, 2002.
168. Maher, KJ, Klimas, NG, Hurwitz, B, Schiff, R and Fletcher, MA. Quantitative fluorescence measures for the determination of intracellular perforin content. *Clin Diag Lab Immunol*, 9:1248-1252, 2002.
169. Antoni, M, Cruess, D, Klimas, N, Maher, K, Cruess, S, Kumar, M, Lutgendorf, S, Ironson, G, Schneiderman, N and Fletcher, MA. Stress Management and Immune System Reconstitution in Symptomatic HIV-Infected Gay Men Over Time: Effects on Transitional Naive T-cells (CD4+CD45RA+CD29+). *Amer J. Psychiatry*, 159: 143-145, 2002
170. Cruess, S, Antoni, M, Hayes, A, Penedo, F, Ironson, G, Lutgendorf, S, Fletcher, MA and Schneiderman, N. Changes in Mood and Depressive Symptoms and Related Change Processes During Cognitive Behavioral Stress Management in HIV-Infected Men. *Cognitive*

Therapy Res 26: 373 – 392, 2003.

171. Motivala, S.J., Hurwitz, B.E., Llabre, M.M., Klimas, N.G., Fletcher, M.A., Antoni, M.H., LeBlanc, W.G., & Schneiderman, N. Psychological distress is associated with decreased memory T-helper and B-cell counts in pre-AIDS HIV seropositive men and women but only in those with low viral load. *Psychosomatic Med.* 65(4), 627-635, 2003.
172. Pereira, D, Antoni, M, Danielson, A, Simon, T, Efantis-Potter, J, Carver, C, Ironson, G, Klimas, N, Fletcher, MA and O'Sullivan, M. Stress as a predictor of symptomatic genital herpes recurrence in women with human immunodeficiency virus. *Psychosomatic Res.*, 54:237-244, 2003.
173. Cruess, D., Antoni, M.H., Gonzalez, J., Fletcher, M.A., Klimas, N., Duran, R., Ironson, G., & Schneiderman, N.. Sleep disturbance mediates the association between psychological distress and immune status among HIV-positive men and women on combination antiretroviral therapy. *J. Psychosomatic Res*, 54:185-9, 2003.
174. Penedo, F., Gonzalez, J., Duran, R., Dahn, J., Baker, S., Weaver, K., Antoni, M.H., Malow, R., Ironson, G., Fletcher, M.A., Costa, P., & Schneiderman, N. Personality, quality of life and HAART adherence among men and women living with HIV/AIDS. *J Psychosomatic Res*, 54, 271-278, 2003.
175. O'Cleirigh, C, Ironson G, Antoni M, Fletcher MA, McGuffey, Balbin E, Schneiderman, & Solomon G Emotional expression and depth processing of trauma and their relation to long-term survival in patients with HIV/AIDS. *J Psychosomatic Res.* ;54:225-35, 2003.
176. Chavoustie, SE, Perez, PP, Fletcher, MA, Maher, K, Mitrani, A and Thomas, R. Pilot study: Effect of PDS-2865 on natural killer cell cytotoxicity. *J Amer Nutraceutical Assoc.* 6:39-42, 2003.
177. Patarca, R, Isava, A, Campo, R, Rodriguez, N, Nunez, E, Alter, M, Marchette, M, Sanabia, M, Mitchell, C, Rivera, D, Scott, G, Jayaweera, D, Moreo, J, Boulanger, C, Kolber, M, Mask, C, Sierra, E, Vallejo, R, Page, J, Klimas, N and Fletcher, MA. Human Immunodeficiency Virus Type 1 pharmacogenomics in clinical practice: Relevance of HIV-1 drug resistance testing (part 1). *J Environmental Path, Toxicology and Oncology* 22:201-234, 2003.
178. Patarca R, Isava A, Campo R, Rodriguez NJ, Nunez E, Alter M, Marchette M, Sanabia MM, Mitchell C, Rivera D, Scott G, Jayaweera D, Moreno J, Boulanger C, Kolber M, Mask CW, Sierra EM, Vallejo R, Page JB, Klimas NG, Fletcher M. Human immunodeficiency virus type 1 pharmacogenomics in clinical practice:: relevance of HIV-1 drug resistance testing (Part 2). *J Environ Pathol Toxicol Oncol.* 22(4):235-79, 2003.
179. Gonzalez, JS, Penedo, F, Antoni, M, Duran, R, Fernandez, MF, McPherson-Baker, S, Ironson, G. Schneiderman, Klimas, N and Fletcher, MA. Social support, positive states of mind and HIV treatment adherence in men and women living with HIV/AIDS. *Health Psychol.*23:413-418, 2004.
180. Hernandez-Reif, M, Ironson, G, Field, T, Hurley, J, Katz, G, Diego, M, Weiss, S, Fletcher, MA. Schanberg, S, Kuhn, C , Burman I. Breast cancer patients have improved immune and neuroendocrine functions following massage therapy. *J Psychosomatic Res.* 57:45-52, 2004.
181. Shor-Posner G, Miguez MJ, Hernandez-Reif M, Perez-Then E, Fletcher MA. Short Report: Massage treatment in HIV-1 infected Dominican children: a preliminary report on the efficacy of massage therapy to preserve the immune system in children without antiretroviral medication. *JACM* 10(6):1093-5. 2004.
182. Antoni, M, Cruess, D, Klimas, N, Carrico, A, Maher, K, Cruess, S, Lechner, S, Kumar, M, Lutgendorf, S, Ironson, G, Fletcher, MA, Schneiderman, N. Increases in a marker of immune system reconstitution are predated by decreases in 24-h urinary cortisol and depressed mood during a 10-week stress management intervention in symptomatic HIV-infected men. *J Psychosomatic Res.* 58(1):3-13. 2005.
183. Ironson, G, Balbin, E., Stuetzle, R., Fletcher, MA, O'Cleirigh, C, Laurenceau, JP, Schneiderman, N and Solomon, G. Dispositional optimism and the mechanisms by which it predicts slower disease progression in HIV: Proactive behavior, avoidant coping and depression. *Int J Behav*

- Med. 12: 86-97, 2005.
184. Hernandez-Reif, M, Field, T, Ironson, G, Beutler, J, Vera, Y, Hurley, J, Fletcher, MA, Schanberg, S and Kuhn, C. Natural killer cells and lymphocytes increase in women with breast cancer following massage therapy. *Intern J Neuroscience* 115:495-510, 2005.
185. Maher, K, Fletcher MA. Quantitative flow cytometry in the clinical laboratory, *Clin. Appl Immunol Rev.*5:353-372, 2005.
186. Maher, K, Klimas, NG and Fletcher, MA. Chronic fatigue syndrome is associated with diminished intracellular perforin. *Clin Exp Immunol*, 142:505-511, 2005.
187. Carrico, A, Antoni, M, Pereira, D, Fletcher, MA, Lechner S, and Schneiderman N. Cognitive behavioral stress management effects on mood, social support and a marker of anti-viral immunity are maintained up to one year in HIV+ gay men, *Int J Behav Med Res.*12:218-26, 2005.
188. Hurwitz BE, Brownley KA, Movivala SJ, Milanovich Jr, Kibler JI, Filion L, LeBlanc WG, Kumar, M, Klimas NG, Fletcher, MA and Schneiderman, N. Sympatho-Immune Anomalies underlying the response to stressful challenge in HIV spectrum disease. *Psychosomatic Med.* 67:798-806, 2005.
189. Antoni, M.H., Carrico, A.W., Durán, R.E., Spitzer, S., Penedo, F., Ironson, G., Fletcher, M.A., Klimas, N., and Schneiderman, N. Randomized clinical trial of cognitive behavioral stress management on HIV viral load in gay men treated with HAART. *Psychosomatic Med.* 68:143-51. 2006.
190. Ironson, G., O'Cleirigh, C., Fletcher, M.A., Laurenceau, J.P., Balbin, E., Klimas, N., Schneiderman, N., and Solomon, G. Psychosocial factors predict CD4 and viral load change in men and women with HIV in the era of HAART. *Psychosomatic Med.* 67(6):1013-21, 2005.
191. Miguez MJ, Rodriguez A, Hadrigan S, Asthana D, Burbano X, Fletcher MA. Interleukin-6 and platelet protagonists in T lymphocyte and virological response. *Platelets.* 16:281-6, 2005. Penedo, F, Dahn, J, Kinsinger, D. Antoni, M, Molton, I, Gonzalez, J, Fletcher, MA, Roosa, B, Carver, C and Schneiderman, N. Anger suppression mediates the relationship between optimism and natural killer cell cytotoxicity in men treated for localized prostate cancer. *J Psychosom Res.* 60:423-427, 2006.
192. Siegel, DS, Antoni, M, Fletcher, MA, Maher, K, Segota, MC, Weiss, D, Cruess, Klimas, N. Impaired natural immunity, cognitive dysfunction, and physical symptoms in patients with chronic fatigue syndrome: preliminary evidence for a subgroup? *J Psychosom Res.* 60(6):559-66, 2006.
193. Shor-Posner G, Hernandez-Reif M, Miguez MJ, Fletcher MA, Quintero N, Baez J, Perez-Then E, Soto S, Mendoza R, Castillo R and Zhang G. Impact of a massage therapy clinical trial on immune status in young Dominican children infected with HIV-1. *JACM* 12(6):511-16, 2006.
194. Carrico AW, Antoni MH, Duran RE, Ironson G, Penedo F, Fletcher MA, Klimas N, Schneiderman N. Reductions in depressed mood and denial coping during cognitive behavioral stress management with HIV-Positive gay men treated with HAART. *Ann Behav Med.* 31:155-64. 2006
195. Ironson G, Stuetzle R, Fletcher MA. An increase in religiousness/spirituality occurs after HIV diagnosis and predicts slower disease progression over 4 years in people with HIV. *J Gen Intern Med.* 21:Suppl 5:S62-8, 2006
196. Jason, L.A., Torres-Harding, S., Maher, K., Reynolds, N., Brown, M., Sorenson, M., Fletcher, M.A., & Lu, T. Baseline cortisol levels predict treatment outcomes in a CFS non-pharmacologic clinical trial. *J Chronic Fatigue Synd.* 14:39-59, 2008.
197. Jason LA, Torres-Harding S, Brown M, Sorenson M, Donalek J, Corradi K, Maher K, Fletcher MA. Predictors of change following participation in non-pharmacologic interventions in CFS. *Trop Med Health.* 36:23-32, 2008.
198. Klimas N, O'Brian A, Fletcher MA. Overview of HIV. *Psychosom Med.* 70:523-30, 2008. Review.

199. O'Cleirigh C, Ironson G, Fletcher MA, Schneiderman N. Written emotional disclosure and processing of trauma are associated with protected health status and immunity in people living with HIV/AIDS. *Br J Health Psychol.* 13:81-4, 2008.
200. Fekete EM, Antoni M, Lopez C, Duran R, Penado F, Bandiera F, Fletcher MA, Klimas NG, Kumar M, Schneiderman N. Men's Serostatus Disclosure to Parents: Associations Among Social Support, Ethnicity, and Disease Status in Men Living with HIV. *Brain Behavior Immun,* 23(5):693-9, 2009.
201. Antoni MH, Pereira DB, Marion I, Ennis N, Andrasik MP, Rose R, McCalla J, Simon T, Fletcher MA, Lucci J, Efantis-Potter J, O'Sullivan MJ. Stress management effects on perceived stress and cervical neoplasia in low-income HIV-infected women. *J Psychosom Res.*65:389-401, 2008.
202. Ironson G, Balbin E, Stieren E, Fletcher MA, Schneiderman N, Kumar M. Perceived stress and norepinephrine predict the effectiveness of response to protease inhibitors in HIV. *Int J Behav Med.* 2008;15:221-6.
203. Dodd SM, Pereira DB, Marion I, Andrasik M, Rose R, Simon T, Fletcher MA, Lucci J. Maher K, O'Sullivan MJ, Efantis-Potter J, Antoni MH. Depressive Symptoms and Cervical Neoplasia in HIV+ Low-Income Minority Women with Human Papillomavirus Infection. *Int J Behav Med.* 2009 May 8. [Epub ahead of print]
204. Torres-Harding, S., Sorenson, M., Jason, L.A., Reynolds, N., Brown, M, Maher, K., Fletcher, M.A. The associations between basal salivary cortisol levels and illness symptomatology in chronic fatigue syndrome. *J Appl Biobehavioral Res.* 13:157-160, 2009.
205. Marion I, Antoni M, Pereira D, Wohlgemuth W, Fletcher MA, Simon T, O'Sullivan MJ Distress, sleep difficulty, and fatigue in women co-infected with HIV and HPV. *Behav Sleep Med.* 7(3):180-93,2009
206. Whistler T, Fletcher MA, Lonergan W, Zeng, XR, Laperrier A, Lin, J-M, Vernon S, Klimas NG. Impaired immune function in Gulf War Illness. *BMC Medical Genomics.* 2:12, 2009.
207. Fekete EM, Antoni M, Lopez C, Mendez A, Szeto A, Fletcher MA, Klimas N, Kumar M, Schneiderman N. Stress buffering effects of oxytocin on disease status in low income ethnic minority women living with HIV. *Brain Behav Immun.* 23(5):693-9. Epub 2009.
208. Fletcher MA, Zeng XR, Barnes Z, Lewis S and Klimas NG. Plasma cytokines in women with chronic fatigue syndrome. *J Translational Med* 2009, 7:96 (12 November 2009).
209. Porter N, Lerch A, Jason LA, Sorenson M, Fletcher, Herrington J. A comparison of immune functionality in viral versus non-viral CFS subtypes. *J Behav Neurosci Res* 8:1-8, 2010.
210. Broderick G, Fuite J, Kreitz A, Vernon SD, Klimas N, Fletcher MA. Circadian rhythms in cytokine secretion in chronic fatigue syndrome. *Brain Behav Immun.* 2010 Jun 19. [Epub ahead of print] PMID: 20600817
211. Fletcher MA, Zeng XR, Maher K, Levis S, Hurwitz B, Antoni M, Broderick G, Klimas NG. Biomarkers in chronic fatigue syndrome: evaluation of natural killer cell function and dipeptidyl peptidase IV/CD26. *PLoS ONE.* 2010 May 25;5(5):e10817. PMID: 20520837.
212. Fletcher MA, Rosenthal M, Antoni M, Ironson G, Zeng X, Barnes z, Harvey, J, Hurwitz B, Levis-Dusseau S, Broderick G, Klimas, N. Plasma neuropeptide Y: a biomarker for symptom severity in chronic fatigue syndrome. *Behav Brain Funct* 2010, 6:76.
213. Broderick G, Kreitz A, Fuite J, Fletcher MA, Vernon SD, Klimas N. A pilot study of immune network remodeling under challenge in Gulf War Illness. *Brain Behav Immun.* 2011 25:302-313
214. Broderick G, Fuite J, Kreitz A, Vernon SD, Klimas N, Fletcher MA. A formal analysis of cytokine networks in chronic fatigue syndrome. *Brain Behav Immun.* 2010 Oct;24(7):1209-17.
215. Fekete EM, Antoni MH, Lopez C, Mendez AJ, Szeto A, Fletcher MA, Klimas N, Kumar M, Schneiderman N. Stress buffering effects of oxytocin on HIV status in low-income ethnic minority women. *Psychoneuroendocrinology.* 2011 Jan 5. [Epub ahead of print]
216. Ironson G, Stuetzle R, Ironson D, Balbin E, Kremer H, George A, Schneiderman N, Fletcher MA. View of God as benevolent and forgiving or punishing and judgmental predicts HIV disease progression. *J Behav Med.* 2011 Feb 22. [Epub ahead of print]

217. Ruffin R, Ironson G, Fletcher MA, Balbin E, Schneiderman N. Health Locus of Control Beliefs and Healthy Survival with AIDS.. *Int J Behav Med*. 2011 Sep 15.
218. Lopez C, Antoni M, Penedo F, Weiss D, Cruess S, Segotas MC, Helder L, Siegel S, Klimas N, Fletcher MA. A pilot study of cognitive behavioral stress management effects on stress, quality of life, and symptoms in persons with chronic fatigue syndrome. *J Psychosom Res*. 2011 Apr;70(4):328-34. Epub 2011 Jan 15.
219. Lattie EG, Antoni MH, Fletcher MA, Penedo F, Czaja S, Lopez C, Perdomo D, Sala A, Nair S, Fu SH, Klimas N. Stress management skills, neuroimmune processes and fatigue levels in persons with chronic fatigue syndrome. *Brain Behav Immun*. 2012 Mar 6.
220. Klimas NG, Broderick G, Fletcher MA. Biomarkers for chronic fatigue. *Brain Behav Immun*. 2012 Nov;26(8):1202-10. doi: 10.1016/j.bbi.2012.06.006. Epub 2012 Jun 23. Review.
221. Fletcher MA, Barnes Z, Broderick G, Klimas NG. Psychoneuroimmunology and natural killer cells: the chromium release whole blood assay. *Methods Mol Biol*. 2012;934:313-24.
222. Broderick G, Fletcher MA, Gallagher M, Barnes Z, Vernon SD, Klimas NG. Exploring the diagnostic potential of immune biomarker coexpression in gulf war illness. *Methods Mol Biol*. 2012;934:145-64.
223. Broderick G, Katz BZ, Fernandes H, Fletcher MA, Klimas NG, Smith FA, O'Gorman MR, Vernon SD, Taylor R. Cytokine expression profiles of immune imbalance in post-mononucleosis chronic fatigue. *J Transl Med*. 2012 Sep 13;10(1):191.
224. Broderick G, Ben-Hamo R, Vashishtha S, Efroni S, Nathanson L, Barnes Z, Fletcher MA, Klimas N. Altered immune pathway activity under exercise challenge in Gulf War Illness: an exploratory analysis *Brain Behav Immun*. 2013 Feb;28:159-69. doi: 10.1016/j.bbi.2012.11.007. Epub 2012 Nov 29.
225. Lopez CR, Antoni MH, Pereira D, Seay J, Whitehead N, Potter J, O'Sullivan M, Fletcher MA. Stress Management, Depression and Immune Status in Lower Income Racial/Ethnic Minority Women Co-infected with HIV and HPV. *J Appl Biobehav Res*. 2013 Mar 1;18(1):37-57. Epub 2013 Mar 8.
226. Seay JS, Fekete EM, Antoni MH, Ironson G, Fletcher M, Schneiderman N. Ethnicity Moderates the Relationship Between Perceived Stress and Benefit Finding in HIV+ Men Who Have Sex with Men (MSM). *Int J Behav Med*. 2013 Apr 10.
227. Smylie AL, Broderick G, Fernandes H, Razdan S, Barnes Z, Collado F, Sol C, Fletcher MA, Klimas N. A comparison of sex-specific immune signatures in Gulf War illness and chronic fatigue syndrome. *BMC Immunol*. 2013 Jun 25;14:29. doi: 10.1186/1471-2172-14-29.
228. Fekete EM, Seay J, Antoni MH, Mendez AJ, Fletcher MA, Szeto A, Schneiderman N. Oxytocin, Social Support, and Sleep Quality in Low-Income Minority Women Living With HIV. *Behav Sleep Med*. 2013 Jun 25. [Epub ahead of print]
229. Seay JS, McIntosh R, Fekete EM, Fletcher MA, Kumar M, Schneiderman N, Antoni MH. Self-reported sleep disturbance is associated with lower CD4 count and 24-h urinary dopamine levels in ethnic minority women living with HIV. *Psychoneuroendocrinology*. 2013 Jul 10. pii: S0306-4530(13)00239-4. doi:
230. Ironson G, O'Cleirigh C, Leserman J, Stuetzle R, Fordiani J, Fletcher M, Schneiderman N. Gender-specific effects of an augmented written emotional disclosure intervention on posttraumatic, depressive, and HIV-disease-related outcomes: a randomized, controlled trial. *J Consult Clin Psychol*. 2013 Apr;81(2).
231. Kremer H, Ironson G, Kaplan L, Stuetzle R, Fletcher MA. Compassionate Love as a Predictor of Reduced HIV Disease Progression and Transmission Risk. *Evid Based Complement Alternat Med*. 2013;2013:819021. doi: 10.1155/2013/819021. Epub 2013 Nov 18.
232. Lattie EG, Antoni MH, Fletcher MA, Czaja S, Perdomo D, Sala A, Nair S, Fu SH, Penedo FJ, Klimas N. Beyond Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Symptom Severity: Stress Management Skills are Related to Lower Illness Burden. *Fatigue*. 2013;1(4). doi: 10.1080/21641846.2013.843255

233. McIntosh RC, Ironson G, Antoni M, Kumar M, Fletcher MA, Schneiderman N. Alexithymia is linked to neurocognitive, psychological, neuroendocrine, and immune dysfunction in persons living with HIV. *Brain Behav Immun*. 2013 Nov 1. pii: S0889-1591(13)00523-0. doi: 10.1016/j.bbi.2013.10.024
234. Craddock TJA, Fritsch P, Rice MA Jr, del Rosario RM, Miller DB, Fletcher MA, Klimas NG, Broderick G. (2014) A Role for Homeostatic Drive in the Perpetuation of Complex Chronic Illness: Gulf War Illness and Chronic Fatigue Syndrome. *PLoS ONE* 9(1): e84839. doi:10.1371/journal.pone.0084839
235. Craddock, T. J., Del Rosario, R. R., Rice, M., Zysman, J. P., Fletcher, M. A., Klimas, N. G., Broderick, G. (2015). Achieving Remission in Gulf War Illness: A Simulation-Based Approach to Treatment Design. *PloS one*, 10(7), e0132774. (Peer Reviewed: No)
236. Vashishtha, S., Broderick, G., Craddock, T. J., Fletcher, M. A., Klimas, N. G. (2015). Inferring Broad Regulatory Biology from Time Course Data: Have We Reached an Upper Bound under Constraints Typical of In Vivo Studies? *PloS one*, 10(5), e0127364. (Peer Reviewed: No)
237. Harvey, J. M., Broderick, G., Bowie, A., Barnes, Z. M., Katz, B. Z., O'Gorman, M. R., Vernon, S. D., Fletcher, M. A., Klimas, N. G., Taylor, R. (2016). Tracking post-infectious fatigue in clinic using routine Lab tests. *BMC pediatrics*, 16(1), 54. (Peer Reviewed: No)
238. Russell, L., Broderick, G., Taylor, R., Fernandes, H., Harvey, J., Barnes, Z., Smylie, A., Collado, F., Balbin, E. G., Katz, B. Z., Klimas, N. G., Fletcher, M. A. (2016). Illness progression in chronic fatigue syndrome: a shifting immune baseline. *BMC immunology*, 17, 3. (Peer Reviewed: No)
239. Craddock, T. J., Harvey, J. M., Nathanson, L., Barnes, Z. M., Klimas, N. G., Fletcher, M. A., Broderick, G. (2015). Using gene expression signatures to identify novel treatment strategies in gulf war illness. *BMC medical genomics*, 8, 36. (Peer Reviewed: No)
240. Hall, D. L., Antoni, M. H., Lattie, E. G., Jutagir, D. R., Czaja, S. J., Perdomo, D., Lechner, S. C., Stagl, J. M., Bouchard, L. C., Gudenkauf, L. M., Traeger, L., Fletcher, M. A., Klimas, N. G. (2015). Perceived Fatigue Interference and Depressed Mood: Comparison of Chronic Fatigue Syndrome/Myalgic Encephalomyelitis Patients with Fatigued Breast Cancer Survivors. *Fatigue : biomedicine, health & behavior*, 3(3), 142-155. (Peer Reviewed: No)
241. Kremer, H., Ironson, G., Kaplan, L., Stuetzle, R., Baker, N., Fletcher, M. A. (2015). Spiritual coping predicts CD4-cell preservation and undetectable viral load over four years. *AIDS care*, 27(1), 71-9. (Peer Reviewed: No)

## VII. US PATENTS HELD

1. Bovine Glycoproteins and Use in Diagnosing Infectious Mononucleosis. 4,460,694
2. New Purified Glycoproteins and Their Use in the Diagnosis of Infectious Mononucleosis. 4,525,459

## VIII. PUBLISHED ABSTRACTS AND PRESENTATIONS

1. Fletcher, M.A., Sims, R., Allen, R., and Sulkin, S.E.: Influence of Temperature On Antibody Production In The Bat. *Texas Rep Biol. Med.* 20:142, 1962.
2. Prager, M., and Fletcher, M.A.: The Effect of Sialic Acid Release on Erythrocyte Serology. *Transfusion* 5:374, 1962.
3. Fletcher, M.A. and Prager, M.D.: The Effect of Certain Enzymes on Rh Agglutination by Incomplete Antibody. *Tex. Rep Biol. Med.* 23:632, 1965.
4. Prager, M. and Fletcher, M.A.: The Serologic Effect of the Release of Sialic Acid (SA) By Enzymes. *Fed.Proc.* 25:246, 1966.
5. Prager, M. and Fletcher, M.A.: Serologic Effect of Pronase. *Transfusion* 6:520, 1966.
6. Springer, G., Fletcher, M.A. and Regression, J.: Amide content of Erythrocyte Blood Group and Virus Inhibitory Glycoprotein. *Fed. Proc.* 28:899, 1969.
7. Fletcher, M.A. and Woolfolk, B.J.: Immunochemical Characterization of Heterophile Antibody of Infectious Mononucleosis. *Bacteriol. Proc.* 1972.
8. Fletcher, M.A. and Lo, T.M.: Isolation and Characterization of a Glycoprotein from Goat Erythrocyte Membrane *Fed. Proc.* 33:77, 1974.
9. Klein, I., Levey, G.S. and Fletcher, M.A.: Glucagon Binding and Adenylate Cyclase: Evidence for a Dissociable Receptor Site. *Clin. Res.* 221, 1974.
10. Fletcher, M.A., Lo, T.M. and Graves, W.: Gel Electrophoresis Studies of Goat Erythrocyte Glycoprotein. *Soc. Complex Carbohydrates*, October, 1975.
11. McKinney, E.C., Lo, T.M., Fletcher, M.A. and Claflin, A.J.: Immunologic Studies of Prostate Adenocarcinoma In Rat Model. *Clin. Res.* 25, 1977.
12. McKinney, E.C., Fletcher, M.A., Block, N.L. and Claflin, A.J.: Immunogenicity of the Dunning R3327 Prostate Adenocarcinoma In The Fisher-Copenhagen F1 Hybrid Rat. *Fed. Proc.* 36, 1977.
13. Vesely, D.L., Graves, W.R., Lo, T.M., Fletcher, M.A., and Levey, G.S.: Isolation Of A Specific Guanylate Cyclase Inhibitor. *Endocrine Society*, 1977.
14. Fletcher, M.A., Claflin, A.J., McKinney, E.C., and Lo, T.M.: Glycoprotein From The Sheep Erythrocyte Membrane Which Inhibits "E" Rosette Formation. *Fed. Proc.* 37, 1978.
15. Fletcher, M.A., Lo, T.M., McKinney, E.C. and Claflin, A.M.: Characterization and Receptor Properties of Sheep Erythrocyte Glycoproteins. *Soc. Complex Carbohydrates* 1978.
16. Vesely, D.L., Claflin, A.J., Hudson, J.L., Bagwell, C.G., Lehotay, D.C. Lo, T.M., Fletcher, M.A. and Levey, G.S.: The Effect Of An Extract Of The Balsam Pear On The Growth And Guanylate Cyclase Activity Of An Undifferentiated Prostatic Adenocarcinoma. *Clin. Res.* 26:35A, 1978.
17. Caldwell, K.E., Lo, T.M., and Fletcher, M.A.: Interaction of Limulin with Membrane Glycoproteins. *South Florida Branch ASM.* Oct., 1978.
18. Lo, T.M., Caldwell, K.E., Levey, B.A., and Fletcher, M.A.: A New Reagent for The Detection of Heterophile Antibody of Infectious Mononucleosis. *Fed. Proc.* 38, 1979.
19. McKinney, E.C., Claflin, A.J., Lo, T.M., and Fletcher, M.A.: A Glycoprotein From Sheep Erythrocyte with T Lymphocyte and Other Sialic Acid Receptor Properties., *Florida ACS*, Feb., 1979.
20. Fletcher, M.A., Lo, T.M., Claflin, A.J., McKinney, E.C.: Membrane Glycoproteins Of The Dunning Rat Prostate Adenocarcinoma. *Soc. Complex Carbohydrates*, A12, 1979.
21. Barker, D.Y., Caldwell, K.E., Rzepiela, A.J. and Fletcher, M.A.: Characterization of the Reaction of Erythrocyte Membrane Glycoproteins with Horseshoe Crab Lectin. *Clin. Res.* 27:744A, 1980
22. Fletcher, M.A. Caldwell, K.E., Claflin, A.J. and Malinin, T.: Further Characterization of a Tumor Cell Growth Inhibitor from the Balsam Pear, *Fed. Proc.*, 39, 1980.
23. Fletcher, M.A., Caldwell, K.E., Claflin, A.J., and McKinney, E.C.: A Lymphocyte Binding Glycoprotein From Sheep Erythrocyte Membrane. *Proc. 4th Int. Cong. Immunol.* 7-5-12, 1980.
24. Rzepiela, A.J., Claflin, A.J., McKinney, E.C., Caldwell, I.E. and Fletcher, M.A.: Lectin Binding Membrane Proteins of a Rat Prostate Adenocarcinoma. *Fed. Proc.* 39, 778, 1980.
25. Rzepiela, A.J., Claflin, A.J., McKinney, E.C., Caldwell, K.E. and Fletcher M.A.: Immunologic and

- Lectin binding Differences Between Sublines of a Rat Prostate Adenocarcinoma. Proc. 4th Int. Cong. of Immunol. 10-4-75, 1980.
26. Klimas, N.G., Lo, H., Brunschwig, J.P., Caldwell, K.E., Latif, Z.A., and Fletcher, M.A. Biochemical Morphological and Receptor Properties of Erythrocyte Glycoproteins, Soc. Complex Carbohydrates, 1980.
  27. Latif, Z., Caldwell, K. and Fletcher, M.A.: Infectious Mononucleosis: Immunochemical Characterization of Heterophile Antigens from Bovine Erythrocyte Membrane. Fed. Proc. 40:355, 1981.
  28. Kozlovskis, P., Claflin, A.J., Gratzner, H., Rubin, R.W., Fletcher, M.A. and Malinin, T.I. A Cell Line Derived From a Rat Prostate Adenocarcinoma. Fed. Proc. 30:1981.
  29. Caldwell, K.E. and Fletcher, M.A.: The Major Glycoprotein of Horse Erythrocyte Membrane. Soc. Complex Carbohydrates, 1981.
  30. Klimas, N.G., Caldwell, K.E., Latif, Z.A. and Fletcher, M.A.: A Purified Erythrocyte Bovine Glycoprotein Useful In The Serodiagnosis of Infectious Mononucleosis. Clin. Res. 29 No. 5, 1981.
  31. Saez, L. Latif, Z.A. and Fletcher, M.A: An Inhibitor of Infectious Mononucleosis Antibody in Human Sera. Clin. Res. 29 No. 5, 1981.
  32. Fletcher, M.A., Caldwell, K.E., Saez, L. and Latif, Z.A.: Serodiagnosis of Infectious Mononucleosis with a Horse Erythrocyte Glycoprotein Latex Reagent. Fed. Proc. 41, 1982.
  33. Fletcher, M.A., Bourguignon, L.Y.W., Caldwell, K.E., Lehotay, D. and Rubin, R.W.: A Low Molecular Weight Natural Plant Product That Breaks Down Microtubules in vivo and Prevents Tubulin Polymerization in vitro. American Soc. for Cell Biology, 1983.
  34. Fletcher, M.A., Caldwell, K.E., Kozlovskis, P., Claflin, A.J. and Rubin, R.W.: An Inhibitor of Tubulin Polymerization From *Momordia charantia* var *abbreviata*. Fed. Proc., 1983.
  35. Caldwell, K., and Fletcher, M.A: N-terminal Pyroglutamyl Residue- Part Of The Receptor For Paul-Bunnell Antibody of Some Membrane-Derived Sialoglycoproteins. Society for Complex Carbohydrates, Lexington, 1983.
  36. Fischl, M.A., Latif, Z.A., Pitchenik, A., Schultz, D., Ingram, M.L. and Fletcher, M.A: An Inhibitor in the Sera of Haitians with Acquired Immunodeficiency Syndrome of Lymphocyte Proliferation. Clin. Res. 31:343.A, 1983.
  37. Scott, G.B., Parks, W.P., Fischl, M., Fletcher, M.A. and Klimas, N.G.: Acquired Immunodeficiency Syndrome in Haitians: A Household Approach. Presented to the Cold Spring Harbor Special AIDS Meeting. Cold Spring Harbor, New York, September 17, 1983.
  38. Klimas, N.G. and Fletcher, M.A: Elevation of "Forssman-like" Antibody in AIDS. Clin. Res. 42:350, 1984.
  39. Fischl, M.A., Klimas, N. G., Wang, G., Georgiades, J.A., Spira, T. and Fletcher, M.A.. Human -lymphoblastoid Interferon in the Treatment of Kaposi's Sarcoma, Internatl. Interferon Conf., Frankfurt, 1984.
  40. Fischl, M. A., E. Gorowski, E., Koch, G., Wang, G., Fletcher, M.A. and Lucas, S. Human Lymphoblastoid Interferon Treatment of Kaposi's Sarcoma in Association with the Acquired Immunodeficiency Syndrome. Ist Internatl. Conf. on AIDS, Atlanta, 1985.
  41. Baron, G.A., Klimas, N.G., Fischl, M. and Fletcher, M.A.: Decreased Natural Cell Mediated Cytotoxicity (NCC) to Cell-Line K562 per Leu 11 Positive Cells in Acquired Immunodeficiency Syndrome (AIDS). Fed. Proc. 44:593, 1985
  42. Fischl, M.A., Dickinson, G., Scott, G., Klimas, M.A., Fletcher, M.A. and Parke, W. Evaluation of Household Contacts of Adult Patients with the Acquired Immunodeficiency Syndrome, Ist Internatl. Conf. on AIDS, Atlanta, 1985
  43. Fischl, M.A., Ahn, Y.S., Klimas, N.G., Harrington, W.J. and Fletcher, M.A. Use of Danazol in Autoimmune Thrombocytopenia Associated with the Acquired Immunodeficiency Syndrome. Ist Internatl. Conf. on AIDS, Atlanta, 1985
  44. Baron, G.A., Klimas, N.G., Fischl, M.A. and Fletcher, M.A. Natural Cell Mediated Cytotoxicity (NCC) to Cell Line K562 per Leu 11 Positive Cell is Decreased in the Acquired

- Immunodeficiency Syndrome. 1st Internatl. Conf. on AIDS, Atlanta, 1985
45. Klimas, N.G., Torres, O., Silveira, G., Fischl, M.A. and Fletcher, M.A. Humoral Immune Abnormalities in Two South Florida Acquired Immunodeficiency Syndrome Risk Groups. 1st Internatl. Conf. on AIDS, Atlanta, 1985
46. Scott, G.B., Fischl, M.A., Klimas, N.G., Fletcher, M.A., Dickinson, G. and Parks, W. Mothers of Infants with the Acquired Immunodeficiency Syndrome (AIDS) : Outcome of Subsequent Pregnancies. 1st Internatl. Conf. on AIDS, Atlanta, 1985
47. Klimas, N.G., Lian, E., Fischl, M.A. and Fletcher, M.A. Apparent False Positive ELISA Tests for HTLV/LAV Antibody (AB) and Polyclonal B cell Activation (PCBA) in Acquired Immunodeficiency Syndrome (AIDS) Risk Groups. 2nd Internatl. Conf. on AIDS, Paris, 1986
48. Baron, G. and Fletcher, M.A. Inhibitory Effects of Serum from Patients with the Acquired Immunodeficiency Syndrome (AIDS) on in vitro Interferon Gamma (IFNG) and Interferon Alpha (INFA) Enhancement of Natural Cell-Mediated Cytotoxicity (CYT). 2nd Internatl. Conf. on AIDS, Paris, 1986
49. Fischl, M.A., Dickinson, G.M., Scott, G.B., Klimas, N.G., Fletcher, M.A. and Parks, W. Heterosexual and Household Transmission of the Human T-lymphotropic Virus Type III. 2nd Internatl. Conf. on AIDS, Paris, 1986
50. Fischl, M.A., Dickinson, G.M., Flanagan, S. and Fletcher, M.A. Human T-lymphotropic Virus Type III Infection Among Female Prostitutes. 2nd Internatl. Conf. on AIDS, Paris, 1986
51. Klimas, M.A., Lubs, M. and Fletcher, M.A. Complement (C') Activation and Immune Complex (IC) Formation in Asymptomatic Women with Multiple Miscarriages. 6th International Congress of Immunology, Toronto, 1986
52. Fletcher, M.A. and Klimas, N.G. Polyclonal B cell activation (PBA) and the Incidence of Antibody to HTLVIII/LAV (AB) in Groups at Risk for Acquired Immunodeficiency Syndrome (AIDS). 6th International Congress of Immunology, Toronto, 1986
53. Baron, G. and Fletcher, M.A. Abnormal Populations of Natural Killer Cells and Decreased Natural Cell Mediated Cytotoxicity in Patients with AIDS Related Complexes (ARC). 6th International Congress of Immunology, Toronto, 1986
54. Baron, G.C., Klimas, N.G., Ashman, M.A., Fischl, M.A. and Fletcher, M.A.: Immune Parameters of Patients with AIDS/Kaposi's Sarcoma During Human Lymphoblastoid Interferon Treatment. 3rd International Congress on AIDS, Washington, D.C., 1987.
55. Dodds, S., Fletcher, M.A., P. O'Hearn, Cole, P., Caralis, P., et al.: Inter- and Intra- Personal Factors in the Recruitment and Retention of Subjects For an AIDS Intervention Research Study. 3rd International Congress on AIDS, Washington, D.C., 1987.
56. Baron, G.C., Bouguignon, L.Y.W., Klimas, N.G., Fischl, M.A., Scott, G.B. and Fletcher, M.A.: Reduced Lymphocyte Cap Formation in Patients with AIDS and ARC. 3rd International Congress on AIDS, Washington, D.C., 1987.
57. Fletcher, M.A. and the Transfusion Safety Study Group: The Relationship of Antibody to HIV, Age, Sex and Treatment Status to Lymphocyte Subsets in Congenital Clotting Disorder (CCD) Patients. 3rd International Congress on AIDS, Washington D.C., 1987.
58. Tarsis, S.L., Klimas, N.G., Baron, G.S., Ashman, M.A. and Fletcher, M.A.: Decreased Natural Killer Cell Activity and Changes in T Lymphocyte Surface Markers in Patients with Chronic Epstein Barr Virus (EBV) Infection. 5th Annual Medical Laboratory Immunology Conference, Williamsburg, VA, 1987.
59. Eisdorfer, C., Szapocznik, G. Scott, Fletcher, M.A., Klimas, N.G., Fordyce-Baum, M. The Biopsychosocial Research Center on AIDS: A Multidisciplinary Approach to the Investigation of the AIDS Disease. 3rd International Congress on AIDS, Washington, D.C., 1987.
60. Caldwell, K.E. and Fletcher, M.A., A Sialoglycopeptide from Bovine Erythrocytes which Interacts with the Paul-Bunnell Antibody of Infectious Mononucleosis. Glycoconjugates. Proc. 12th International Symposium, Lille, France, 1987.
61. Caldwell, K.E. and Fletcher, M.A., Studies on the Interaction of Mammalian Erythrocyte

Membrane Sialoglycoproteins with the E-Rosette Receptor of the Human T-Lymphocyte. Glycoconjugates. Proc. 12th International Symposium, Lille, France, 1987.

62. Fischl, M.A., Dickinson, G.A., Flanagan, S. and Fletcher, M.A., Human Immunodeficiency Virus (HIV) among Female Prostitutes in South Florida. 3rd International Conference on AIDS, Washington, D.C., 1987.
63. Fletcher, M.A., Caralis, P., Laperrier, A., Ironson, G., Klimas, N.G., Perry, A., Ashman, M. and Schneiderman, N. Immune Function and Aerobic Training as a Function of Anti-HIV Status in Healthy Gay Males, 4th International Conference on AIDS, Stockholm, Sweden, June, 1988.
64. Fletcher, M.A., O'Hearn, P., Ingram, F., Ironson, G., Laperrier, A., Klimas, N.G. and Schneiderman, N. Anticipation and Reaction to Anti-HIV Test Results: Effect on Immune Function in an AIDS Risk Group. 4th International Conference on AIDS, Stockholm, June, 1988.
65. Fletcher, M.A., Ironson, G., Caralis, P., Laperrier, A., Klimas, N.G., O'Hearn, P., Antoni, M. and Schneiderman, N. A Behavioral Intervention Study in Anti-HIV Positive and Negative Gay Men Presented at the 96th Annl Meeting of the American Psychological Society, Atlanta, GA, 1988.
66. Solomon, G.F., Temoshok, L. and Fletcher, M.A. A Workshop on the Biopsychosocial Aspects of AIDS. 45th Annual Meeting of the American Psychosomatic Society, Toronto, Ontario, Canada, 1988.
67. Ironson, G., O'Hearn, P. LaPerrier, A., Antoni, M., Ashman, M., Schneiderman, N. and Fletcher, M.A. News of Anti-HIV Status and Immune Function in Healthy Gay Men. Accepted as Citation Poster at the 9th Annual Society Behavioral Medicine, Boston, MA, April, 1988.
68. Laperrier, A., O'Hearn, P., Ironson, G., Caralis, P. Ingram, F., Perry, A., Klimas, N.G., Schneiderman, N. and Fletcher, M.A. Exercise and Immune Function in Healthy HIV Antibody Negative and Positive Gay Males. presented at the 9th Annual Society of Behavioral Medicine. Boston, MA, 1988.
69. Szapoczik, J., Millon, C., Morgan, R., Blaney, N., Wilkie, F., Guterman, A., Sfakianakis, G., Fletcher, M.A., Beach, R., Ramey, G. and C. Eisdorfer, C. Toward a Multivariate Biopsyschosocial Model of AIDS. 4th International AIDS Conf. Stockholm, June, 1988.
70. Beach, R., Mantero-Atienza, E., Crass, R., Fletcher, M.A., Morgan, R. and Fordyce-Baum, M.A. Vitamin B12 Levels and Immune Function in Early HIV Infection. 4th International AIDS Conf., Stockholm, June, 1988.
71. Mantero-Atienza, E. Beach, R., Crass, R, Fletcher, M.A., Morgan, R. and Fordyce-Baum, M.A. Retinol Binding Protein in Early HIV Infection. 4th International AIDS Conf., Stockholm, June, 1988.
72. Fischl, M., Fayne, T., Flanagan, S., Ledan, M., Stevens, R., Fletcher, M.A., LaVoie, L. and Trapido, E. Seroprevalence and Risks of HIV Infections in Spouses of Persons Infected with HIV. 4th International AIDS Conf. Stockholm, June, 1988.
73. Fischl, M., Reese, J., Dearman, L., Resnick, L., Fletcher, M.A., Argawal. R. and Myers, M. Phase I Study of Interferon Alpha and AZT in Patients with AIDS Related Kaposi's Sarcoma. 4th International AIDS Conf., Stockholm, June, 1988.
74. Berger, J., Resnick, L., Atherton, S., Fletcher, M.A., Norenberg, M., Sheremata, W., Coles, M. and Marcos, J. Multiple Sclerosis-like Illness with HIV Infection. 4th International AIDS Conf., Stockholm, June, 1988.
75. Wilkie, F., Morgan, R., Eisdorfer, C. and Fletcher, M.A. The Association Between Visual spatial Skills and Immunologic Changes in Early HIV Infection. 4th International AIDS Conf., Stockholm, June, 1988.
76. Baron, G.A., Ashman, M.A., Fischl, M.A., Klimas, N. and Fletcher, M.A. Immunomodulation of Patients with AIDS Related Complexes (ARC) During Therapy with Recombinant Interferon Gamma (IFNG). 4th International AIDS Conf., Stockholm, June, 1988.
77. Klimas, N.G., Page, B., Chitwood, D., Ashman, M. and Fletcher, M.A. Immune Abnormalities in Street Intravenous Drug Users. 4th International AIDS Conf. Stockholm, 1988.
78. Blaney, N., Klimas, N.G. Fletcher, M.A. and Morgan, R. Mood State, Social Support and

- Immune Function in HIV- and HIV+ IV Drug Abusers, an AIDS Risk Group. 4th International AIDS Conf., Stockholm, June, 1988.
79. Klimas, N.G., N. Blaney, Morgan, R., Ashman, M. and Fletcher, M.A. Abnormal Lymphocyte Subsets and Natural Killer Cell Function in Anti-HIV Negative Intravenous Drug Users on Methadone. 4th International AIDS Conf., Stockholm, June, 1988.
  80. Fletcher, M.A., Gelman, R., Giorgi, J.V., Kidd, P., Koepke, J.A., Landay, A., Nusinoff, S., Lewis, D., Nicholson, J., Paxton, H., Rickman, W., Stites, D. and Fahey, J.L. Evaluation of Immune Response During HIV Infection and AIDS: T Cell Subsets. Symposium and Workshop organized by Clin. Immunol. Soc., NIAID and CIRID, UCLA, San Francisco, CA, November, 1988.
  81. LaPerriere, A., Ironson, G., Klimas, N., Caralis, P., Antoni, M., Fletcher, M.A. and Schneiderman, N., Aerobic Exercise and Immune Function in an AIDS Risk Group. presented at a symposium at the Society of Behavioral Medicine, San Francisco, CA, 1989.
  82. LaPerriere, A. Ironson, G., O'Hearn, P., Caralis, P., Antoni, M., Ingram, F., Klimas, N., Baggett, L., Schneiderman, N. and Fletcher, M.A. Aerobic Exercise Training as a Buffer of Anxiety and Depression in HIV Infected Individuals. Soc. Behav. Med., 1989.
  83. Antoni, M., Fletcher, M.A., LaPerriere, A., Schneiderman, N., Ironson, G. Stress Management, Psychological and Immune Functioning Among Asymptomatic HIV+ and HIV- Gay Males. Presented as part of a workshop chaired by Karl Goodkin: Psychoimmunological Factors in Progression of HIV Infection, Amer. Assoc. Advanc. Sci., San Francisco, 1989.
  84. Baggett, H.L., Antoni, M., August, S., LaPerriere, A., Schneiderman, N., Ironson, G. and Fletcher, M.A. Frequency of Relaxation Practice, State Anxiety and Immune Markers in an HIV-1 High Risk Group., Soc. Behav. Med., 1989.
  85. Ingram, F., LaPerriere, A., Antoni, M., O'Hearn, P., Baggett, H.L., August, S., Schneiderman, N., Fletcher, M.A., Ironson, G. Effects of Behavioral Intervention on Coping Behaviors in Healthy Gay Males at Risk for AIDS. Soc. Behav. Med., 1989.
  86. August, S., Ironson, G., Antoni, M., LaPerriere, A., O'Hearn, P., Goldstein, D., Ingram, F., Schneiderman, N., Carver, C.S. and Fletcher, M.A. Notification of HIV-1 Antibody Status: Coping and Mood State in Healthy Gay Men. Soc. Behav. Med., 1989.
  87. Ironson, G., LaPerriere, A., August, S., O'Hearn, P., Goldstein, D., Antoni, M., Schneiderman, N. and Fletcher, M.A., Correlations of Immune Function with Mood and Coping Measures over Time in an AIDS Risk Group. Soc. Behav. Med., 1989.
  88. Fletcher, M.A., Psychoimmunology of AIDS: Stress and Exercise. symposium chaired by J. Gorman, Psychoimmunology Update. Amer. Psych. Assoc., May, 1989.
  89. Millon, C., Salvato, F., van Riel, F., Blaney, N., Fletcher, M.A. and Klimas, N.G. Psychosocial Characterization of Chronic Fatigue Syndrome/Epstein-Barr Virus Patients. J. Exp. Clin. Can. Res. 7, #3, supplement:87, 1988.
  90. van Riel, F., Mantero-Atienza, E. Salvato, F., Beach, R., Fletcher, M.A., Klimas, N.G. and Fordyce-Baum, M. Nutritional Status of Chronic Fatigue Syndrome (CFS)/ Epstein-Barr Virus (EBV) Patients. J. Clin. Can. Res. 7, #3, supplement: 88, 1988.
  91. Salvato, F., Fletcher, M.A., Ashman, M. and Klimas, N.G. Immune Dysfunction Among Chronic Fatigue Syndrome (CFS) Patients with Clear Evidence for Epstein-Barr Virus (EBV) Reactivation. J. Clin. Can. Res. 7, #3, supplement: 89, 1988.
  92. Klimas, N.G., Blaney, N., Morgan, R., Simoneau, J. and Fletcher, M.A. Immunologic Abnormalities in Anti-HIV-1 negative (-) and positive (+) IV drug Abusers (IVDA) on Methadone. V Internatl. Conf on AIDS. Montreal, p157, Abstract Book, 1989.
  93. Klimas, N.G., Berger, J., LaVoie, L. and Fletcher, M.A. Immunophenotyping in Asymptomatic and Neurologically Symptomatic Anti-HIV-1 Positive and Anti-HTLV-1 Negative Men. V Internatl. Conf on AIDS, Montreal, 1989.
  94. Klimas, N.G., Berger, J., Spector, S., Friedman, H., Ashman, M. and Fletcher, M.A. Cytokines and Immunoglobulins (Ig) in Cerebrospinal Fluid (CSF) of Anti-HIV-1 Positive, Anti-HTLV-1 Negative Asymptomatic Men. V Internatl. Cong. on AIDS, Montreal, 1989.

95. Fletcher, M.A. and the Transfusion Safety Study Group. Immunophenotypes of Anti-HTLV-1 Positive (+) Blood Donors. V Internatl. Cong. on AIDS, Montreal, 1989.
96. Fletcher, M.A., Ironson, G., LaPerriere, A., Simoneau, J., Klimas, N.G. and Schneiderman, N. Immunological and Psychological Predictors of Disease Progression in Gay Males at Risk for AIDS. V Internatl. Cong. on AIDS, Montreal, 1989.
97. Fletcher, M.A., Klimas, N.G., Ironson, G., LaPerriere, A. and Schneiderman, N. Immunologic Abnormalities of Seropositive and Seronegative Men. V Internatl. Cong. on AIDS, Montreal, 1989.
98. Berger, J., McCarthy, M., Fletcher, M.A., Klimas, N., Lo, E. and Pall, L. Serological and Cerebrospinal Fluid Parameters Related to Syphilis in HIV Asymptomatic Seropositives. V Internatl. Cong. on AIDS, Montreal, 1989.
99. Berger, J., McCarthy, M., Resnick, L., Fletcher, M.A., Klimas, N.G., LaVoie, L. and Pall, L. History of Syphilis as a Cofactor for the Expression of HIV Infection. V Internatl. Cong. on AIDS, Montreal, 1989.
100. Berger, J., McCarthy, M., Resnick, L., Fletcher, M.A., Klimas, N. G., Lo, E. and Pall, L. T4 Lymphocyte Counts and Presence of Abnormalities on Neurological Examination in Asymptomatic HIV Seropositive Subjects. V Internatl. Cong. on AIDS, Montreal, 1989.
101. Berger, J., McCarthy, M., Levin, T., DiDonna, E., Klimas, N.G., Resnick, L. and Fletcher, M.A., Neurological and Cognitive Correlates of T4 Lymphocyte Counts in Asymptomatic HIV Seropositive Adults. Neurological and Neuropsychological Complications of AIDS, Quebec City, 1989.
102. Fletcher, M.A., Klimas, N.G., Morgan, R., Page, B., Chitwood, D., Blaney, N., LaPerriere, A. and Schneiderman, N. Immune Function in AIDS Risk Groups: Effects of Infection with Retroviruses and Polydrug (Including Alcohol) Use. Invited Presentation, Alcohol and AIDS Network Conference, Tucson, 1989.
103. Fletcher, M.A., Klimas, N.G., Salvato, F., Millon, C. and Ateinsa-Mantero, E. Immunological Parameters of Chronic Fatigue Syndrome (CFS). Invited Presentation ,VII Internatl. Cong of Immunology, Berlin, 1989.
104. Klimas, N.G., Blaney, N., Morgan, R. and Fletcher, M.A. Immunologic Abnormalities in Human Immunodeficiency Virus-1 Negative (HIV-) IV Drug Abusers (IVDA) on Methadone. VII International Cong. of Immunology, Berlin, 1989.
105. Fletcher, M.A. and Klimas, NG. Immunologic Measurements in Psychoimmunology. Symposium on Psychoimmunology of AIDS. Amer. Psy. Assoc., New Orleans, 1989.
106. Fletcher, M.A., Friedman, A., Klimas, N.G., Spector, S., Schneiderman, N. and Friedman, H. Cytokines in the Psychoimmunology of AIDS. Presented at Amer. Soc. Microbiol. New Orleans, 1989.
107. Fletcher, M.A. Behavior Modification Intervention Research in AIDS. Invited Presentation at Acad. Behavioral Med. Research Annual Meeting, Lake Montock, NY, 1989.
108. Mantero-Atienza, E., Beach, R., Van Reil, F., Fletcher, M.A., Morgan, R., Eisdorfer, C and Fordyce-Baum, M. Low Vitamin B<sub>6</sub> Levels and Immune Dysfunction in HIV-1 Infection, pg. 468, Abstract Book, Vth Internal. Conf. on AIDS, Montreal, 1989.
109. Fletcher, M.A. Immunology of Chronic Fatigue Syndrome Seminario Sobre Psicoimmunologia. Buenos Aires, Argentina, 1990.
110. Fletcher, M.A. Psychoimmunology of AIDS. I Jounadas Patagonicas de Infectologia, Universidad National del Comahue, Neoquen, Argentina, 1990.
111. Fletcher, M.A., Antoni, M., Klimas, N.G., LaPerriere, A., Ironson, G. and Schneiderman, N. Psychoneurological Aspects of HIV-1 Serostatus Notification. Sixth International Conference on AIDS, San Francisco, CA, 1990.
112. Klimas, N.G., Berger, J., Stein, N., Gamber, C. and Fletcher, M.A., Lymphocyte Phenotypes in HIV-1 Associated Neurological Disease. Neurological and Neuropsychological Complications of AIDS, Monterey, CA, 1990.

113. The Transfusion Safety Study Group represented by M. A. Fletcher. Age and HIV-1 Effects on Lymphocyte Phenotypes in Congenital Clotting Disorders (CCD) Patients. The Clinical Immunology Society, 5th Annual Conf on Clin. Immunol. Chicago, IL, 1990.
114. The Transfusion Safety Study Group represented by M.A. Fletcher. Lymphocyte Phenotypes in HTLV Seropositive Blood Donors and Recipients. Third Annual Retrovirology Conference, Maui, 1990.
115. Lutgendorf, M.S.W., August, S., M., Antoni, M., LaPerriere, A., Schneiderman, N., Baggett, H.L. and Fletcher, M.A.. Hardiness, Coping and Immunity in HIV-1 Infected Individuals. *Psychosomatic Med.* 52:243, 1990.
116. Kumar, M., Morgan, R., Fletcher, M.A., Kumar, A.M., Szapocznik, J. and Eisdorfer, C. Norepinephrine response and immune function in HIV Positive Subjects. Presented at the 5th Internatl. Conf. on AIDS. Montreal, Canada, 1989.
117. Ingram, F., Friedamn, A., Antoni, M., LaPerriere, Fletcher, M.A. and Schneiderman, N. Cortisol Differences Between High and Low Depressed Men Before and After Receiving HIV-1 Antibody Test Results. *Psychosomatic Med.* 52: 243-244, 1990.
118. August, S.M., Antoni, M., LaPerriere, A., H.L. Baggett, O'Hearn, P., Schneiderman, N., Fletcher, M.A. and Ironson, G. Psychosocial and Behavioral Factors associated with Perceived Risk of HIV-1 Infection. Tenth Annual Society of Behavioral Medicine, Chicago, IL, April, 1990.
119. Ingram, F., Antoni, M., LaPerriere, A., O'Hearn, P., Fletcher, M.A., Schneiderman, N., and Ironson, G. High Anxiety Associated with Immune Suppression in Healthy Gay Males Regardless of HIV-1 Antibody Status. Tenth Annual Society of Behavioral Medicine, Chicago, IL, April, 1990.
120. Ingram, F., LaPerriere, A., Antoni, M., O'Hearn, P., Schneiderman, N., Fletcher, M.A. and Ironson, G. Correlates of Depression Along Healthy Gay Males Awaiting Notification of HIV-1 Antibody Test Results. Tenth Annual Society of Behavioral Medicine, Chicago, IL, April, 1990.
121. Schneiderman, N., Antoni, M., LaPerriere, A. and Fletcher, M.A. Stress Management, Immunity and HIV-1. Presented at the First Annual Meeting of the International Society of Behavioral Medicine. Upsala, Sweden, June, 1990.
122. Goodkin, K, LaPerriere, A., Blaney, N., Morgan, M., Fletcher, M.A., Millon, C. and Szapocznik. Restaging of HIV-1 Infection for Behavioral Medicine Research. *Proc. 11th Annl. Meeting, Soc. Behav. Med. Res.*, p. 84, 1990.
123. Matero-Atienza, E., Sotomayor, M.C., Shor-Posner, G., Fletcher, M.A., Beach, R., Basit, A., Cabrejos, C. and Baum, M.K. Seleium Status and Immune Function in Early HIV-1 Infection. 7th International Conference on AIDS, Florence, Italy, 1991.
124. Antoni, M.H., Baggett, H.L., August, S., LaPerriere, A., Ironson, G., Klimas, G., Schneiderman, N. and Fletcher, M.A. Stress Management Intervention Buffers Distress Responses and Elevates Immunologic Markers Following Notification of HIV-1 Seropositivity. Presented at the 12th Annual Convention of the Society of Behavioral Medicine, Washington, D.C., 1991.
125. Antoni, M.H., Rodriquez, M., Starr, K., Gellman, M., Kumar, M., Lutgendorf, S., Massie, C., Ironson, G., LaPerriere, A., Schneiderman, N. and Fletcher, M.A. Immunological and Neuroendocrine Responsivity to Challenge in HIV-infected Men. Presented at the 99th Annual Meeting of the Amer. Psychol. Assoc., San Francisco, CA, 1991.
126. Baum, M.K., Beach, R., Matero-Atienza, E., Fletcher, M.A., Rosner, B., Eisdorfer, C. and Shor-Posner, G. Predictors of Change in Immune Function: Longitudinal Analysis of Nutritional and Immune Status in Early HIV-1 Infection. 7th Internal. Conf. on AIDS, Florence, Italy, 1991.
127. Beach, R., Cabrejos, C., Matero-Atienza, E., Basit, A., Shor-Posner, G., Chang, J., Fletcher, M.A. and Baum, M.K. Effect of Zinc Normalization on Immunological Function in Early HIV-1 Infection. 7th Internal. Conf. on AIDS, Florence, Italy, 1991.
128. Ingram, F., Antoni, M., LaPerriere, A. Friedman, A., O'Hearn, P., Fletcher, M.A. and Schneiderman, N. Plasma Cortisol Levels and Psychosocial Correlates of Depression Among Gay Men Before and After Receiving HIV-1 Antibody Test Results. Presented at the 12th Annl.

- Meeting of the Soc. Behav. Med., Washington, D.C., 1991.
129. Ironson, G., Simoneau, J., Friedman, A., Starr, K., Antoni, M., LaPerriere, A., Schneiderman, N. and Fletcher, M.A. Psychosocial Predictors of Disease Progress in HIV-1 Infected Gay Men. Presented at the 99th Annual Meeting of the Amer. Psychol. Assoc., San Francisco, CA, 1991.
  130. Baggett, H.L., Antoni, M., August, S., LaPerriere, A., Ingram, F., Schneiderman, N. and Fletcher, M.A.. The Effects of Frequency of Relaxation Practice on Immune Markers in an HIV-1 Infected High Risk Group. *Psychosomatic Med.* 52:243, 1990.
  131. Lutgendorf, S., August, S., Antoni, M., LaPerriere, A., Baggett, H.L., Schneiderman, N. and Fletcher, M.A. Hardiness Affect and Immunity in HIV-1 Infected Individuals. Presented at the 12th Annl. Meeting of the Soc. Behav. Med., Washington, D.C., 1991.
  132. Lutgendorf, S., Antoni, M., LaPerriere, A., Baggett, H.L., Starr, K., Schneiderman, N. and Fletcher, M.A. Cognitive Processing and HIV-1 Seropositivity Notification: Affective Sequela. Presented at the 12th Annl. Meeting of the Soc. Behav. Med., Washington, D.C., 1991.
  133. Schneiderman, N., Antoni, M., LaPerriere, A. and Fletcher, M.A. Hormonal and Immunological Reactivity in HIV-1 Seropositive and Seronegative Men. Presented at Invited Symposium on Stress and Integrated Psychophysiological Response, for Divion 38 at the 98th Annl. Meeting of the Amer. Psychol. Assoc., Boston, MA, 1990.
  134. Starr, K., LaPerriere, A., Ironson, G., Antoni, M., Fletcher, M.A. and Schneiderman, N. Self-Efficacy and Disease Progression in AIDS. Presented at the 99th Annl. Meeting of the Amer. Psychol. Assoc., 1991.
  135. Transfusion Safety Study Group represented by Fletcher, M.A. Co-infection with HIV-1 and HTLV; Effect on Lymphocyte Phenotype. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
  136. Transfusion Safety Study Group represented by Fletcher, M.A. Lymphocyte Phenotypes of HTLV-1 and HTLV-II Blood Donors. 4th Annl. Retrovirology Conf., Jamaica, 1991.
  137. Fletcher, M.A., Page, J.B., Morgan, R. and Fletcher, M.A. Street IVDU: Immune function and HIV and HTLV infections. 4th Annl. Retrovirology Conf., Jamaica, 1991.
  138. Klimas, N.G., Lee, H., Fletcher, M.A. No Serologic Evidence for HTLV-I or II in Chronic Fatigue Syndrome. 4th Annl. Retrovirology Conf., Jamaica, 1991.
  139. Goodkin, K., Blaney, N., Feaster, D., Fletcher, M.A., Baum, M., Szapocznik, J. and Eisdorfer, C. Bereavement is Associated with Changes in Cellular Immune Function in Asymptomatic HIV-1 Seropositive Gay men. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
  140. Klimas, N.G., Ironson, G., Simoneau, J., Freidman, A., Antoni, M., Schneiderman, N. and Fletcher, M.A.. Relationship of HIV-1 Disease Progression to Psychosocial Factors in Gay Men. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
  141. Patarca, R., Harrington, W., DeLaCruz, V and Fletcher, M.A. Differential Patterns of Soluble Immune Mediators in HIV-Infected Individuals with EBV-Positive or Negative B cell Lymphomas. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
  142. Garcia-Morales, RT., Klimas, N.G., Walling, J., Patarca, R., Moody, D. and Fletcher, M.A. Phenotype of CD8 Lymphocytes from HIV-1 Infected Persons after Isolation and Ex-Vivo Expansion. 7th Internatl. Conf. on AIDS, Florence, Italy, 1991.
  143. Fletcher, M.A. Chronic Fatigue Syndrome, EBV and Stress. Presented at Invited Symposium on Psychoneuroimmunology chaired by H. Friedman. Amer. Soc. for Microbiol., New Orleans, LA, 1991.
  144. Fletcher, M.A. Update on Clinical Laboratory Findings in HIV-1 Infection. Invited presentation at Coulter Symposium, Boston, MA, 1991.
  145. Klimas, N.G., Patarca, R., King, W., Gamble, R. and Fletcher, M.A. Cytokines in Chronic Fatigue Syndrome. Presented at the 3rd Networking Conf. on Psychoneuroimmunology, Columbus, OH, 1991.
  146. Fletcher, M.A., Ironson, G., Hopper, D., Antoni, M., Kumar, M., LaPerriere, A., Klimas, N.G. and Schneiderman, N. Blunted In Vitro Response to Catecholamines in HIV-1 Seropositive Gay Men. Presented at the 3rd Networking Conf. on Psychoneuroimmunology, Columbus, OH,

1991.

147. Ironson, G., Simoneau, J., Klimas, N.G., Antoni, M., LaPerriere, A., Schneiderman, N. and Fletcher, M.A. HIV-1 Disease Progression and Psychosocial Variables. Presented at the 3rd Networking Conf. on Psychoneuroimmunology, Columbus, OH, 1991.
148. Patarca, R., Guido, P., Klimas, N.G. and Fletcher, M.A. Cytokine Activation in Hemodialysis Patients. Presented at the Clin, Immunol. Soc., Crystal City, VA, 1991.
149. Klimas, N.G., Patarca, R., and Fletcher, M.A. Cytokine and other Soluble Marker Abnormalities in Chronic Fatigue Syndrome. Presented at the Clin, Immunol. Soc., Crystal City, VA, 1991.
150. Klimas, N.G., Fletcher, M.A., Walling, J., Patarca, R., Garcia-Morales, R., Moody, D. and OKarma, T. Phase 1 Trial of Adoptive Therapy with Purified CD8 Cells in HIV Infection. vol 2, pg. B161. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.
151. Fletcher, M.A., Klimas, N.G., Walling, J., Patarca, R., Alberricin, C., Mayer, V., Garcia-Morales, R., Gamber, C., Moody, D. and OKarma, T. Adoptive Therapy with Purified CD8 Cells in HIV Infection. vol 2, pg B161. Presented at the 8th Internatl Conf. on AIDS
152. Garcia-Morales, R. Patarca, R., Albarricin, C, Klimas, N.G., Gamber, C., Berger, J. and Fletcher, M.A. Soluble Immune Mediator Profiles in Cerebrospinal Fluids from HIV-1 Infected Individuals with Different Neuropathologies. vol 2, pg, 219. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.
153. Allarriacin, C., Patarca, R., Martinez, G., Palacio, J., Barbosa, E. and Fletcher, M.A. Elevated IgA Levels as an Early Indicator of HIV-1 Infection in Columbians. vol 2, A42. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.
154. Antoni, M., Esterling, B., Schneiderman, N., LaPerriere, A., Ironson, G., Klimas, N., and Fletcher, M.A. Behavioral Interventions Modulate IgG Antibody Titers to ECA-VCA and HHV-6 in HIV+ and HIV- Gay Men. vol 2, pg B223. Presented at the 8th Internatl. Conf. on AIDS, Amsterdam, 1992.
155. Fletcher, M.A., Morgan, R. and Klimas, N.G. Substance Abuse, NK Cells and Immune Function. Presented at the 2nd International Symposium on Drugs of Abuse, Immunity and AIDS, Tampa, FL, 1992.
156. Patarca, R., Klimas, N.G., Lutgendorf, S., Albarracin, C., Garcia-Horales, R., van Reil, F., Antoni, M., and Fletcher, M.A. Changes in the Expression Patterns of soluble Immune Mediator in Association with CD8+ T Cell Activation in CFS. Presented at the International Research Conf. on Chronic Fatigue and Immune Dysfunction Syndrome, Albany, N.Y., 1992.
157. Keller, R., van Reil, F., Maislis, J., Lane, J., Reiter, W., Klimas, N.G. and Fletcher, M.A. Correlation of DR4 and DQ1 with Immunologic Defects in CFS. Presented at the International Research Conf. on Chronic Fatigue and Immune Dysfunction Syndrome, Albany, N.Y., 1992.
158. Antoni, M., Brickman, A., Imia-Fins, A., Klimas, N., Lutgendorf, S., Ironson, G., Quillan, R., Miquez, M.J., van Reil, F., Morgan, R., Patarca, R. and Fletcher, M.A. Cognitive Appraisals, Coping Strategies Predict CFS Disturbances. Presented at the International Research Conf. on Chronic Fatigue and Immune Dysfunction Syndrome, Albany, N.Y., 1992.
159. Klimas, N.G., Fletcher, M.A. Walling, J., Pardo, V., Ocarma, T., Kremer, J., Response of Kaposi's Sarcoma (KS) to Autologous CD8 cells, Expanded and Activated Ex Vivo and Reinfused with IL-2. IXth Intl. Conf. on AIDS, Berlin, Abstract Book 1. p58, 1993.
160. Miquez-Burbano, M., Bauym. M., Moreno, J., Jin, X., Shor-Posner, G. and Fletcher, M.A., Low Affinity Receptor, (FceR) in T Cells, is Associated with IgE Production by Peripheral Blood Lymphocytes (PBL) in HIV+ Patients. IXth Intl. Conf. on AIDS, Berlin, Abstract Book 1. p219, 1993.
161. Shor-Pazner, G., Miquez-Burbano, M., Mantero-Atienza, E., Fletcher, M.A. and Baum, M., Elevated IgE in Relationship to Plasma Vitamin E Levels in Early HIV-1 Disease. IXth Intl. Conf. on AIDS, Berlin, Abstract Book 1. p220, 1993.
162. Baum, M., Shor-Pazner, G., Quesada, J., Cure, N., Fletcher, M.A., Page, J. Nutritional Abnormalities in Intravenous Drug Users (IVDUs): Impact of HIV-1 Status. IXth Intl. Conf. on

- AIDS, Berlin, Abstract Book 2. p703, 1993.
163. Goodkin, K., Blaney, N., Feaster, D., Klimas, N., Fletcher, M.A., and Baum, M. Psychosocial Variables Predict Long Term Changes in Psychological Distress and Laboratory Progression Markers. IXth Intl. Conf. on AIDS, Berlin, Abstract Book 2. p897, 1993.
  164. Fletcher, M.A. Characterization of Ex Vivo Expanded CD8 T Cells. Intern. BioTechnology Expo. and Conf. (IBEX '93) San Francisco., 1993.
  165. Fletcher, M.A., Klimas, N.G., and Antoni, M. Immunologic Impact of Hurricane Andrew on Immune Markers in Individuals with HIV-1 Infection. Symposium on the Psychoneuroimmunology of Hurricane Andrew, American Psychology Association. Toronto, 1993.
  166. Lutgendorf, S., Klimas, N., Antoni, M., and Fletcher, M.A. Immunologic Impact of Hurricane Andrew on Immune Markers in Individuals with Chronic Fatigue Syndrome. Symposium on the Psychoneuroimmunology of Hurricane Andrew, American Psychology Association. Toronto, 1993.
  167. Ironson, G., Antoni, M., Greenwood, D., Klimas, N., Fletcher, M.A., Bum, A., and Schneiderman, N. Evaluation of psychosocial, immune and endocrine impact of Hurricane Andrew in a Community Sample. Symposium on the Psychoneuroimmunology of Hurricane Andrew, American Psychology Association. Toronto, 1993.
  168. Harrington, W., Cacral, L., Patarca, R., Lai, S., Venet, T., Klimas, N., Fletcher, M.A., and Byrnes, J. Baseline CD8 Counts as a Predictor of Survival in Patients with HIV-Associated Lymphoma Undergoing Chemotherapy. Amer. Soc Hematology, St. Louis, MO 1993.
  169. Fletcher, M.A., Patarca, R., and Klimas, N.G., Possibilities of Autologous CD8 Cell Therapy In HIV Disease. Pediatric Immunology Working Group. AIDS Clinical Trial Group Meeting, Washington, DC, 1993.
  170. Lutgendorf, S., Klimas, N.G., Antoni, M. and Fletcher, M.A. Cognitive Difficulties Correlate with Immune Function in Chronic Fatigue Syndrome, Psychosomatic Medicine Society, Atlanta, GA, 1993.
  171. Burbano-Miquez, M. Moreno, J., Gomez, O., Fletcher, M.A., Shor-Posner, G. and Baum, M. Possible Mechanisms of Elevated IgE in HIV-1 Disease. Experimental Biology, New Orleans, LO, 1993.
  172. Bonvehi, P., Shor-Posner, G., Lu, Y., Fletcher, M.A. and Baum, M. LDL Cholesterol Level as an Indicator of HIV-1 Disease Progression., Experimental Biology, New Orleans, LA, 1993.
  173. Lutgendorf, S. Antoni, M., Ironson, G., Starr, K., Klimas, N., Kumar. M., Cleven, K., Penedo, F., Schneiderman, N. and Fletcher, M.A. Impact of avoidant thoughts on immune functioning in symptomatic HIV positive men., American Psychosomatic Society, Boston, MA, 1994.
  174. Goodkin, K., Blaney, N., Feaster, D., Burkhalter, J., Leeds, B., Tuttle, R. and Fletcher, M.A. A bereavement support group intervention decreases psychological stress in HIV-1 infected homosexual men. in Abstract Book, Xth Intern. Conf on AIDS, Japan, vol II, pg 231, 1994.
  175. Kilbourne, K., Costello, N., Antoni, M., Ironson, G., Fletcher, M.A., Baum, A., Schneiderman, N. How are coping strategies that people use to handle major challenges related to their immune and neuroendocrine responses? Psychosomatic Med. 56:156, 1994 .
  176. Benight, C., Antoni, M., Kilbourne, K., Ironson, G., Costello, N., Fletcher, M.A. and Schneiderman, N. The effect of perceived competence and responsiveness of the environment on psychological and physical health in HIV+ men following Hurricane Andrew. physiological and psychological impact of Hurricane Andrew on an HIV positive population as compared to other stressed populations. Psychosomatic Med. 56:163, 1994
  177. Kilbourne, K., Costello, N., Antoni, M., Ironson, G., Fletcher, M.A. and Schneiderman, N. The physiological and psychological impact of Hurricane Andrew on an HIV positive population as compared to other stressed populations. Presented at the Soc. Behavioral Med. Boston, MA, 1994.
  178. Costello, N., Kilbourne, K., Antoni, M., Ironson, G., Fletcher, M.A. and Schneiderman, N.. Social

- provisions, optimism and distress levels in HIV+ men dealing with the aftermath of Hurricane Andrew. Presented at the Soc. Behavioral Med. Boston, MA, 1994.
179. Fletcher, M.A. and Klimas, N.G. Immunologic aspects of chronic fatigue syndrome. Presented at the American Psychosomatic Society, Boston, MA, 1994.
  180. Ironson, G., Wynings, C., Greenwood, D., Burnett, K., Carver, C., Benight, C., Rodriguez, M. Fletcher, M.A. and Schneiderman, N. Correlates of distress and immune function in the aftermath of Hurricane Andrew. Presented at the PsychoNeuroImmunology Research Society, Key Biscayne, FL, 1994.
  181. Lutgendorf, S., Antoni, M., Ironson, G., Klimas, N., Kumar, M., Schneiderman, N. and Fletcher, M.A. Neuroendocrine and immune effects of a psychosocial intervention in symptomatic HIV seropositive gay men. Presented at the PsychoNeuroImmunology Research Society, Key Biscayne, FL, 1994.
  182. Goodkin, K., Tuttle, R., Molina, G., Feaster, D., Blaney, N., Baldewitz, T. and Fletcher, M.A. Bereavement, depressed mood, and immunologic parameters in HIV+ men. Presented at the PsychoNeuroImmunology Research Society, Key Biscayne, FL, 1994.
  183. Greenwood, D., Evans, J., Ironson, G., Lollis, C., Blake, D., Keels, D., Fletcher, M.A., Kumar, M., Baum, A., and Schneiderman, N. Presented at the PsychoNeuroImmunology Research Society, Key Biscayne, FL, 1994.
  184. Costello, N.L., Kilbourne, K., Antoni, M., Fletcher, M.A., Ironson, G., Baum, A., and Schneiderman, N. The impact of Hurricane Andrew on HIV+ gay men: Anxiety, depression, coping and social support relationships to the disease progression marker, neopterin. Presented at the PsychoNeuroImmunology Research Society, Key Biscayne, FL, 1994.
  185. Patarca, R., Pons, H., Garcia, M., Klimas, N. and Fletcher, M.A. Cytokine patterns in chronic fatigue syndrome. Presented at the Chronic Fatigue Society, Research Meeting, Ft. Lauderdale, FL, 1994
  186. Lane, J.T., Uribe, M., Klimas, N.G., Fletcher, M.A., Keller, R., Tomaka, F., Giannetti, B., Gamatos, P. and Reiter, W. Lymphocyte transfusions to patients with AIDS. Presented to American Association of Blood Banks. November, 1994.
  187. LaPerriere, A., Signoreli, J., Fletcher, M.A., Flipse, D., Perna, F., Perry, A. Weight training and natural killer cell activity in the elderly. Intern Soc. Exercise and Immunology, 1995.
  188. Patarca, R., Klimas, N.G., Walling, J., Yue, X.-S., Garcia, M., Pons, H. and Fletcher, M.A. CD8 T cell-associated cytokine gene expression programs in AIDS. Intrn. Society of Chemotherapy - Biologic Response Modifiers, Cancun, Mexico, Abstracted in J. Immunotherapy, 1995.
  189. Patarca, R. Klimas, N.G., Walling, J., Yue, X.-S., Garcia, M., Pons, H., Sandler, D., Friedlander, A. and Fletcher, M.A., CD8 T cell immunotherapy in AIDS: Lessons learned at the cellular and molecular biology levels. presented FASEB meeting Atlanta, GA, 1995.
  190. Fletcher, M.A. Update on the clinical laboratory immunology of HIV disease. Presented to the Immunology and Allergy Society of Peru., Lima, 1995.
  191. Maher, K., Patarca, R., Walling, J., Sandler, D., Klimas, N., Scott, G., Hutto, C. and Fletcher, M.A. Immunologic attributes of HIV infected children who are slow progressors. presented at American Medical Laboratory immunology Association.( Mario Escobar Memorial Award) Denver, 1995.
  192. Fletcher, M.A. Dysregulated cytokine patterns in CFS. presented at the First International Conference on Chronic Fatigue Syndrome, Brussels, Belgium, 1995.
  193. Maher, K., Ashtana, D., Klimas, N.G., and Fletcher, M.A. CD69 expression following in vitro stimulation with PHA on CD4 and CD8 cells from HIV-infected and normal control subjects. presented to the Clinical Cytometry Society, Charleston, SC, 1995
  194. Fletcher, M.A., Multisite Clinical Trial of the TRAx CD4 assay. presented at the 2nd National Conference on CD4 Lymphocyte Phenotyping, Center for Disease Control. Atlanta, GA, 1995.
  195. Maher K, Asthana D, Patarca R, Klimas NG, and Fletcher MA. CD69 on CD4 and CD8 Cells From HIV-1 infected Donors Clinical Applications of Cytometry. Charleston, SC, 1995

196. Maher K, Patarca R, Hutto C, Scott GB, Martin N, Klimas NG, and Fletcher MA. Immunological Correlates Among Children With Perinatally- Acquired Human Immunodeficiency Type-1 Virus Infection Association of Medical Laboratory Immunologists, Vail, CO, 1995
197. Fletcher, M.A. Cytokine abnormalities in CFS. Clinical Immunology Society. New Orleans, 1996.
198. Klimas, N., Patarca, R. and Fletcher, M.A. Patterns of proinflammatory and type 2 cytokines in CFS. CFIDS Research Foundation Annual Meeting, San Francisco, 1996.
199. Fletcher, M.A. Evaluation of mandated versus laboratory selected reagents for multicolor flow cytometry in multicenter clinical trials. the Clinical Cytometry Society, Charleston, 1996.
200. Hurwitz, B., Antoni, M., Fletcher, M.A., Kumar, M., Graves, JA, Milanovich, JR., Motivala, S., and Schneiderman, N., Stressor-induced immune response patterning in HIV-1 seropositive and seronegative individuals. Fourth annual Proceedings of the International Congress of Behavioral Medicine.. (pp.S53, Amsterdam, 1996.
201. Hurwitz, BE, Antoni, M., Fletcher, M.A., Klimas, N.G., Steffen, B.S., Fillion, L., Leitten, C. and Schneiderman, N., Behavioral, postural and reflex challenges reveal cardiovascular abnormalities in the progression of HIV infection. 53rd annual meeting of the American Psychosomatic Society (pp. 77), New Orleans, 1995.
202. Mail-Rachline, G., La Perriere, A., Perry, A., Klimas, N., Talluto, C., Goldstein, A., Junco, J., Ironson, G., Fletcher, MA and Schneiderman, N. Effect of acute exercise on lymphocyte enumeration in HIV+ African-American women. presented to Amer. Coll. Sports Med., 1997.
203. Maher K, Fletcher MA, Jin XQ, Nunez E, Godoy G, Infantis-Potter J, and
204. O'Sullivan M. Lymphocyte Phenotypes of Cord Blood From Healthy Infants. Clinical Applications of Cytometry,. Charleston, SC, Cytometry 26:347, 1996
205. Talluto, C., LaPerriere, A., Perry, A., Klimas, N., Maik-Rachline, G., Goldstein, A., Majors, P., Ironson, G., Fletcher, M.A. and Schneiderman, N. presented to the Amer, Coll. Sports Med., 1997.
206. Fletcher, M.A. Cytokine patterns in chronic fatigue syndrome. National Conference on Immunomodulation. Vail, Colo., 1997.
207. Maher K, Klimas N, Dickinson G, Triplett J, Maggio C, Valenzuela R, and Fletcher MA.T Lymphocyte Subsets and Highly Active Anti-Retroviral Therapy (HAART) of Human Immunodeficiency Virus (HIV) Infection. Clinical Applications of Cytometry,. Charleston, SC, Cytometry 30:345, 1997
208. Maher K, Klimas NG, Dickinson G, Triplett J, Maggio C, Valenzuela R, and Fletcher MA. Patterns of Immune Reconstitution in HIV-1 Infection Following Highly Active Anti-Retro-viral Therapy. Clinical Applications of Cytometry, Charleston SC, Cytometry, 34:305, 1998
209. Goodkin K, Tuttle R, Feaster D, Blaney NT, Asthana D, Maher K, Fletcher MA. A Bereavement Support Group is Associated with increased Proliferation to PHA in HIV-1+ and HIV-1- Gay Men. Clinical Immunology Society. New Orleans, LA, 1996
210. Maher K, Klimas N, Dickinson G, Triplett J, Maggio C, Cohen V, Valenzuela R, and Fletcher MA. The Effect of highly active anti-retroviral therapy on viral load and the immune system in human immunodeficiency virus (HIV) infection. NY State Wadsworth Conference on HIV Laboratory Testing. Albany, NY, 1997
211. La Perriere, A, Goldstein, A., Klimas, N., Ironson, G., Majors, P, Maik, G., Talluto, C., Fletcher, M.A. and Schneiderman, N., Non-compliant exercise decreases CD4+ cells in early symptomatic HIV infection. Presented to the Society of Behavioral Medicine, San Francisco, CA, 1997.
212. Fletcher, MA Markers of immune progression in HIV. Presented to the Academy for Behavioral Medicine Research. Cape Cod, 1998.
213. Ortiz-Butcher, C, Pennell, JP, Walling, J, Zjadic, B and Fletcher, MA Analysis of hemodialysis by RT/PCR for HIV after accidental splash of a dialysis provider. Presented to the American Society of Nephrology, November 2-5, 1997.
214. Dixon, D., Antoni, M., Kilbourne, K., Wagner, S., Schneiderman, N. and Fletcher, MA. Social

- support buffers PTSD symptoms and HHV-6 antibody titers in HIV+ gay men following hurricane Andrew. *Neuroimmunomodulation*, 5: 15, 1998.
215. Maher K, Cruess D, Antoni M, Schneiderman N, Klimas K, and Fletcher MA. Associations Between Viral Load, Natural Killer Cell (CD56+CD3-) Number, and State Anxiety among HIV Seropositive Men. *Research Perspectives in PsychoNeuroImmunology*, Galveston, TX 1999.
  216. Maher K and Fletcher MA Flow Cytometric Analysis of Natural Killer Cell Perforin Content Correlates with Lytic Potential Clinical Applications of Cytometry, Palm Springs, CA Cytometry, 38:341, 1999
  217. Dixon, D., Antoni, M, Wagner, S., Kilbourn, K, Schneiderman, N, Klimas, N, Fletcher, MA Acute and sustained effects of anxiety on immune status and social support in HIV+ gay men following Hurricane Andrew, *Neuroimmunomodulation*. 6:214, 1999.
  218. Dixon, D. Cruess, S., Kilbourne, Klimas, N, Fletcher, MA., Ironson, G, Baum, A, Schneiderman, N, and Antoni, M. Social support mediates the relationship between loneliness and human herpesvirus-6 (HHV-6) antibody titers. Presented at the annual meeting of the PsychoNeuroImmunology Research Society, Cape Fear, NC 2000.
  219. Fletcher, M.A., Patarca, R., Maher, K., Antoni, M, Klimas, N. Symposium: Multidisciplinary studies of chronic fatigue syndrome. *Int. J. Beh. Med.* 7: suppl 1:98-100, 2000.
  220. Fletcher, M.A., Ironson, G., Solomon, G., Balbin, E., Klimas, N. and Schneiderman, N. Can non-specific cellular immunity protect HIV-infected persons with very low CD4 counts? Presented at Conference on Integrating Psychology and Medicine, Waheki Island, Auckland, NZ, 10-12th Nov., 2000.
  221. Weiss, D, Pereira, D, Antoni, M, Fletcher, MA, Siegel, S, Klimas, N. A group-based intervention enhances coping and energy level and decreases depression in chronic fatigue syndrome. 7<sup>th</sup> International Congress of Behavioral Medicine, Helsinki. *Int. J. Behavioral Med* 9:292-293, 2002.
  222. Ironson, G, Solomon, G, Balbin, E, O'Cleirigh, C, Schneiderman, N and Fletcher, MA. Psychosocial factors related to sustained health in HIV. . 7<sup>th</sup> International Congress of Behavioral Medicine, Helsinki. *Int. J. Behavioral Med* 9:126, 2002.
  223. Maher, K, Fletcher, MA and Klimas, NG. Immunology of CFS. Annual meeting of the AMLI, Toronto, 2003.
  224. Siegel S, Segesta MC, Antoni m, Maher K, Fletcher MA , Weiss D, Klimas N. A Group-Based Cognitive Behavioral Stress Management Intervention Improves Psychosocial and Medical Outcomes in Chronic Fatigue Syndrome. American Psychosomatic Society, 2004.
  225. Balbin E, Ironson G, Ditz K, Fletcher MA. Gay disclosure to family, friends and coworkers: relation to changes in both CD 4 and viral load in HIV/AIDS. American Psychosomatic Society, 2004.
  226. Shor-Posner G, Hernandez-Reif M, Baez J, Soto S, Miguez M-J, Perez-Then E, Fletcher MA, Diaz R, Zhang G. Massage therapy intervention to enhance well-being in HIV+ Dominican children: preliminary results XV AIDS MEETING in Barcelona, Spain, 2004.
  227. Klimas N, Fletcher MA, Maher K.. Elevations of HHV-6 serology are associated with low NK cell Function. International Conference on HHV6 Infection, Barcelona Spain May1-3, 2006.
  228. Klimas NG, Rosenthal M, Fletcher MA.. Immune effects of an acute exercise challenge in Gulf War Illness. Assoc Military Surgeons US. San Antonio, TX, 2006.
  229. Ironson G, Stuehle R, Fletcher MA, View of God is Associated with Disease Progression in HIV. Society of Behavioral Medicine March 22- 25, 2006 San Francisco. Paper Abstract published in *Annals of Behavioral Medicine*, 31 (Supplement), 2006; S074.
  230. Traeger L. Penedo F, Rasheed M, Zhou E, Fletcher MA, Schneiderman N, Antoni M. Cortisol mediates the relationship between stress management skills and prostate-specific antigen (PSA) level among men treated for prostate cancer. American Psychosomatic Society, 2007.
  231. Ironson G, Balbin E, Stieren E, Detz K, Fletcher MA, Schneiderman N, Kumar M. Perceived stress and norepinephrine predict the effectiveness of the response to protease inhibitor

- medication in HIV. American Psychosomatic Society, 2007.
232. Fletcher MA, , X-R Zeng, M Rosenthal, X-Q Jin, G Godoy, Jr & NG Klimas. Immunological Comparison of GWI and CFS. 9<sup>th</sup> International Association of CFS/ME meeting, Ft. Lauderdale, FL, 2007.
  233. Sussex A, Fekete EE, Antoni M, Gonzales J, Penedo F, Fletcher M, Klimas N, MacPherson S, Horne R, Schneiderman N. Support From Health Care Providers, Medication Attributions, HAART Adherence And Viral Load In HIV+ Low-Income Minority Women. American Psychosomatic Society, Baltimore, Md., March, 2008.
  234. Fletcher MA. Neuropeptide Y and dipeptidyl peptidase IV (CD26) in chronic fatigue syndrome. 1<sup>st</sup> Annual Meeting of Neuroimmune Mechanisms and Chronic Fatigue Syndrome. NIH June 20, 2008.
  235. Fletcher MA. Progress in identification of biomarkers for CFS and GWI. The Academy for Behavioral Medicine Research. Lake Louise, Canada, June, 2008.
  236. Fletcher MA. Dipeptidyl peptidase IV(DDPIV/CD26) and neuropeptide y (NPY): Biomarkers for chronic fatigue syndrome. International Conf on Fatigue Science. Okinawa, Japan, September, 2008.
  237. Lopez C, Fekete E, Antoni M, Fletcher MA, Mendez A, Sussex A and Schneiderman N. Oxytocin is Associated with Better Immune Function in Low Income HIV+ Women with High Perceived Social Support. Society of Behavioral Medicine, 2009.
  238. Fletcher MA., Ironson, G, Antoni, M, Hurwitz, Klimas N. Neuropeptide Y (NPY) correlates with symptom severity in chronic fatigue syndrome. 9<sup>th</sup> International IACFS/ME Research and Clinical Conference. Reno, NV. March 2009.
  239. Broderick G, Fuite J, Kreitz A, Vernon SD, Klimas N, Fletcher MA. A formal analysis of cytokine networks in chronic fatigue syndrome. *Brain Behav Immun*. 2010 Oct;24(7):1209-17. doi: 10.1016/j.bbi.2010.04.012. Epub 2010 May 4.
  240. Fletcher MA, Klimas NG and Broderick G. Neuroimmune biomarkers in CFS. From infection to Neurometabolism: a nexus for CFS, a NIH sponsored workshop. Banbury Center, Cold Springs Harbor Laboratory, Long Island, NY. September, 2009 .
  241. Klimas NG, Fletcher MA and Broderick G. Immunologic biomarkers for CFS/ME. 5th Annual Invest in ME/CFS Conference in London, 24 May 2010.
  242. Katz B, Fletcher MA, Smith FA, Taylor R, Vernon SD, Broderick G. 2010. Cytokine Expression as a Potential Prognostic Indicator in Post-infectious Fatigue. *Cytokine* 2010; 52(1-2): SS11-7, 81.
  243. Fletcher MA, Klimas NG and Broderick G Biomarkers for Chronic Fatigue Syndrome, International Science Symposium on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Bond University, Queensland. Australia. 3-4 December 2010.
  244. Fletcher MA. Immunology of CFS/ME. State of Knowledge Workshop. Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Research. NIH. Bethesda, MD. April 7-8, 2011.
  245. Fletcher MA, Klimas NG. Biomarkers in CFS/ME. IACFS/ME conference. Ottawa, September 22 -25, 2011.
  246. Fletcher, MA. Biomarkers in ME/CFS. CFS Advisory Committee. HHS, Washington, DC, October, 2012.
  247. Fletcher, MA. Biomarkers in Gulf War Illness. NOVA Southeastern University. Institute for Neuroimmune Medicine, Ft. Lauderdale, FL, March, 2013.
  248. Kremer H, Ironson G, Kaplan L, Stuetzle R, Baker N, Fletcher MA. Spiritual coping predicts CD4-cell preservation and undetectable viral load over four years. *AIDS Care*. 2015;27 (1):71-9. doi: 10.1080/09540121.2014.952220. Epub 2014 Oct 8. PMID: 25297848
  249. Kremer H, Ironson G, Kaplan L, Stuetzle R, Fletcher MA. Compassionate Love as a Predictor of

- Reduced HIV Disease Progression and Transmission Risk. *Evid Based Complement Alternat Med.* 2013;2013:819021. doi: 10.1155/2013/819021. Epub 2013 Nov 18.
250. Lopez CR, Antoni MH, Pereira D, Seay J, Whitehead N, Potter J, O'Sullivan M, Fletcher MA. Stress Management, Depression and Immune Status in Lower Income Racial/Ethnic Minority Women Co-infected with HIV and HPV. *J Appl Biobehav Res.* 2013 Mar 1;18(1):37-57. Epub 2013 Mar 8. PMID: 23526866
  251. Klimas NG, Broderick G, Fletcher MA. Biomarkers for chronic fatigue. *Brain Behav Immun.* 2012 Nov;26(8):1202-10. doi: 10.1016/j.bbi.2012.06.006. Epub 2012 Jun 23. Review.
  252. Lopez C, Antoni M, Penedo F, Weiss D, Cruess S, Segotas MC, Helder L, Siegel S, Klimas N, Fletcher MA. A pilot study of cognitive behavioral stress management effects on stress, quality of life, and symptoms in persons with chronic fatigue syndrome. *J Psychosom Res.* 2011 Apr;70(4):328-34. doi: 10.1016/j.jpsychores.2010.11.010. Epub 2011 Jan 15.
  253. Ironson G, Stuetzle R, Ironson D, Balbin E, Kremer H, George A, Schneiderman N, Fletcher MA. View of God as benevolent and forgiving or punishing and judgmental predicts HIV disease progression. *J Behav Med.* 2011 Dec;34(6):414-25. doi: 10.1007/s10865-011-9314-z. Epub 2011 Feb 22.

## **IX. FUNDED RESEARCH**

### **Research Support**

NIH 4/6/2016-3/31/2018  
 Proposal Number: 1R21AI124187-01  
 Project Title: "Male-specific genomic mechanisms of transcriptional regulation of ME/CFS/SEID"  
 Principal Investigator: Lubov Nathanson  
 Role: CO-I

DoD 7/1/2015-6/30/2018  
 Proposal Number: W81XWH-15-1-0537  
 Project Title: "Testing the Model: A Phase I/II Randomized Double Blind Placebo Control Trial of Therapeutics: Liposomal Glutathione and Curcumin."  
 Principal Investigator: Nancy Klimas  
 Role: Co-PI

NIH R15 4/15/2015-3/31/2018  
 Proposal Number: 1R15NS087604-01A1  
 Project Title: "Genomic Approach to Find Novel Biomarkers and Mechanisms of CFS/ME"  
 Principal Investigator: Lubov Nathanson  
 Role: Co-I

DOD 7/1/2015-6/30/2018  
 Proposal Number: W81XWH-15-1-0163  
 Project Title: "An integrated genomics and cell biology approach to correlate novel GWI indicators of infections and neuro-inflammatory mechanisms with targeted drug therapy"  
 Principal Investigator: Paula Waziry  
 Role- CO-I

DoD 9/30/2015-9/29/2018  
 Proposal Number: W81XWH-15-1-0582  
 Proposal Name: High Fidelity Design of Multi-Modal Restorative Interventions in Gulf War Illness

Principal Investigator: Gordon Broderick  
Role: Co-I

VA Merit 4/1/2014-3/31/2018  
Proposal Number:  
Project Title: "Gender Differences in GWI and Dynamic Modeling"  
Principal Investigator: Nancy Klimas  
Role: CO-I

NIH RO1 9/1/ 2014 – 7/31 2018  
Proposal Number:  
Project Title: "Gender Differences in CFS/ME and Dynamic Modeling"  
Principal Investigator: Mary Ann Fletcher

Gulf War Illness Research Program 9/30/2013-9/29/2017  
Proposal Number: GW120045, consortium award  
Project Title: "Understanding Gulf War Illness: An Integrative Modeling Approach"  
Principal Investigator: Mariana Morris  
Role: Co-I laboratory studies of immune and genomics in the animal and human subjects, 20% effort

### **Research Support (last 5 years)**

2R56AI065723-06A1 (PI MA Fletcher) 12/15/2006 – 08/31/2014  
Immunologic Mechanisms, Biomarkers and Subsets in CFS/ME  
Goal of this project was to determine the immunologic basis for CFS pathogenesis  
Role: PI 15% effort

2R56AI065723-06A1 (PI MA Fletcher) 12/15/2006 – 08/31/2014  
Immunologic Mechanisms, Biomarkers and Subsets in CFS/ME  
Goal of this project was to determine the immunologic basis for CFS pathogenesis  
Role: PI 15% effort

R21 AI099809-01 (PI MA Fletcher) 08/15/2012 – 08/14/2014  
Microbial Translocation in ME/CFS  
Goal of this project is to determine to relationship of "leaky gut" to symptoms and biomarkers in ME/CFS.  
Role: PI 20% effort

GW093042 DOD (PI G Broderick) 08/01/2010 – 07/30/2013  
Theory-Driven Models for Correcting "Fight or Flight" Imbalance in Gulf War Illness  
A computer-based analysis of the hypothalamic-pituitary-adrenal (HPA) axis, the immune system, and the ability of those systems to ensure survival and then to re-establish homeostasis that existed prior to the "fight or flight" stimulus.  
Role: co-I

NIAMSD 1 R01 AR057853-01A1 (PI NG Klimas) 12/01/2010 – 04/30/2014  
Study of Chronic Fatigue Syndrome using comprehensive molecular profiling with network and control theory

The objective of this study is to improve our understanding of CFS pathogenesis by using broad-scale molecular profiling to create a comprehensive assessment of status in several of the body's regulatory systems  
Role: Co-PI 20% effort

NIH NIMH RO1 (PI Mike Antoni) 2010 -2015  
Virtual platforms for CBT in CFS/ME  
A study of spouse and patient CBT using a virtual platform.  
Role: Co-I, 7% effort

GW080152 DOD (PI N Klimas) 06/2009 – 06/2012  
The Use of Comprehensive Molecular Profiling with Network and Control in GWI  
GWI patients are studied using gene array technology and neuron-endocrine-immunologic profiling pre-post exercise challenge.  
Role: co-PI

R01AI065723-08 (PI MA Fletcher) 10/01/2006 – 09/30/2014  
Immunologic Mechanisms, Biomarkers and Subsets in CFS  
Goal of this project was to determine the immunologic basis for CFS pathogenesis  
Role: PI

R21AA016635 (PI MA Fletcher) 09/30/06 - 05/31/09  
Neuropeptide Y and dipeptidyl-peptidase IV (CD26) in chronic fatigue syndrome  
2R56AI065723-06A1 (PI MA Fletcher) 12/15/2006 – 08/31/2014  
Immunologic Mechanisms, Biomarkers and Subsets in CFS/ME  
Goal of this project was to determine the immunologic basis for CFS pathogenesis  
Role: PI 15% effort

R21 AI099809-01 (PI MA Fletcher) 08/15/2012 – 08/14/2014  
Microbial Translocation in ME/CFS  
Goal of this project is to determine to relationship of “leaky gut” to symptoms and biomarkers in ME/CFS.  
Role: PI 20% effort

GW093042 DOD (PI G Broderick) 08/01/2010 – 07/30/2013  
Theory-Driven Models for Correcting "Fight or Flight" Imbalance in Gulf War Illness  
A computer-based analysis of the hypothalamic-pituitary-adrenal (HPA) axis, the immune system, and the ability of those systems to ensure survival and then to re-establish homeostasis that existed prior to the “fight or flight” stimulus.  
Role: co-I

NIAMSD 1 R01 AR057853-01A1 (PI NG Klimas) 12/01/2010 – 04/30/2014  
Study of Chronic Fatigue Syndrome using comprehensive molecular profiling with network and control theory  
The objective of this study is to improve our understanding of CFS pathogenesis by using broad-scale molecular profiling to create a comprehensive assessment of status in several of the body's regulatory systems  
Role: Co-PI 20% effort

NIH NIMH RO1 (PI Mike Antoni) 2010 -2015  
Virtual platforms for CBT in CFS/ME

A study of spouse and patient CBT using a virtual platform.  
Role: Co-I, 7% effort

Gulf War Illness Research Program 2013-2017  
Proposal Number: GW120045, consortium award  
Project Title: "Understanding Gulf War Illness: An Integrative Modeling Approach"  
Principal Investigator: Mariana Morris  
Role: Co-I laboratory studies of immune and genomics in the animal and human subjects, 20% effort

## **X. PROFESSIONAL SOCIETIES**

American Association of Immunologists; American Society for Microbiology; American Society for the Advancement of Science; Society for Complex Carbohydrates; Association of Women in Science; Society for Experimental Biology and Medicine; Society for Clinical Cytology; Association of Medical Laboratory Immunologists, Steering Committee, 1987; Clinical Immunology Society; PsychoNeuroImmunology Research Society, Scientific Affairs Committee - 1993 1995; American Association of Bioanalysts, Association of Clinical Chemists

## **XI. HONORARY SOCIETIES and HONORS**

Phi Kappa Phi, Alpha Epsilon Delta, Alpha Lambda Delta, Sigma XI, Fellow - Academy for Behavioral Medicine Research

IACFS Award for Outstanding Research in CFS/ME - 2011

## **XII. CONSULTANTSHIPS**

National Cancer Institute (NCI), Tumor Immunology Review Committee 1980 - 1982

NCI - Clinical Cancer Program Project Review Committee Site Visit Participant, 1978 - 1984

National Science Foundation (NSF), Postdoctoral Fellowship Review Committee, 1979 - 1980

NSF Ad Hoc Review, 1979 - 1986

National Institutes of Health (NIH), Immunotechnology Special Review Committee, 1986-87

National Institute of Mental Health (NIMH), Psychoneuroimmunology Training Grants, Site Visitor, 1987 and Special Review Committee, 2004.

National Institute of Drug Abuse (NIDA), Site Visitor, 1988

National Heart, Lung and Blood Institute (NHLBI), Site Visitor, Special Review Committee 1989, 1993, 1998.

National Institute of Allergy and Infectious Diseases (NIAID), Special Review Committee, In vitro methods for AIDS Clinical Trials, 1995

NIAID, Ad Hoc reviewer for AIDS study section, 1991;

NIAID, Special Review Committee for Pediatric AIDS, 1995

NIAID, HIV Vaccine Development Review Committee, 1996, 1997, 1999, 2002 - 2005

NIAID, Special Review Committee for CFAR proposals, 2002, 2003

NIAID, HIV Special Emphasis Panel, 2004

NIH, CFS/FMS/TMD Review Panel, 2007, 2010, 2012

NIAID, Special Review Committee, 2007, 2008, 2010, 2012, 2013

NIH, 2012/08 ZRG1 CB-D (50) - review applications responding to the NIH Common Fund Single Cell Analysis Program [RFA-RM-11-015](#)

HHS, Member Chronic Fatigue Syndrome Advisory Committee

### **XIII. EDITORIAL BOARDS AND REVIEWING**

Clinical Applications in Cytometry; Clinical and Diagnostic Immunology; Journal of Chronic Fatigue Syndrome; Clinical and Applied Immunology Reviews ; Section editor: ASM Manual of Medical Laboratory Immunology, 5th edition. Ad Hoc reviewer, FASEB, Natural Immunity, Annals Internal Medicine, Journal of Immunology, Psychosomatic Medicine, Brain Behavior and Immunity, Journal Infectious Diseases, Journal of Translational Medicine, American Journal of Physiology , PLoS one.

### **XIV. TEACHING**

Specialization: Immunology, Medical Laboratory Immunology, Psychoneuroimmunology

Mentor: Pre-doctoral trainees:

Martin Rosenthal, 2006-2008

Zachary Barnes, 2008-2009

Natalie Hone, 2009

Mentor - Ph.D. candidates:

Karen Caldwell, Ph.D., M.D. 1982 - 1989

George Ann Baron, Ph.D. 1983 - 1987

Brian Esterling, Ph.D. 1989 - 1991

Mentor – Post-doctoral fellows:

Patricia Kozlovskis, Ph.D.1980-1981

Zuhair Latif, Ph.D.1980-1983

Nancy Klimas, M.D.1983-1984

Lisetti Said, M.D.1980-1983

Gerson Silveria, M.D. 1984-1985  
Olga Torres, M.D. 1985-1986  
Fernando Salvato, M.D. 1987-1989  
Roberto Patarca, Ph.D. M.D. 1990-1994  
Kevin Maher, Ph.D., 1993-1994  
Hector Pons, Ph.D., 1994-1995  
Maria Jose Miquez-Burbano, M.D. 1994-1996  
Desh Asthana, Ph.D., 1994 - 1997  
Denise Dixon, Ph.D., 1997 – 1999  
Lina Garcia, M.D., 2007-2009  
Maria Vera, M.D., 2008-2009

Thesis and Dissertation Committees:

Elaine Young 1976-1978  
Stephen Obenauf 1979-1983  
David Charish 1979-1982  
Caroline Petty 1979-1982  
Scott Buessow 1984-1984  
Alicia Sinclair 1984-1985  
Marijane Montgomery 1984-1985  
Gordon Watson 1985-1989  
Peter O'Hearn 1986-1989  
Arthur Laperrier 1987-1988  
H. Lane Bagget 1989-1990  
Sharon August 1990-1991  
Andrea Friedman 1990-1993  
Kathleen Starr 1992-1995  
Susan Lugtendorf 1993-1994  
Teresa Woods 1996-1998  
Deidre Pereira 1996-1998  
Mark Zuckerman 1996-1998  
Frank Penedo 1997- 1999  
Saroch Motivala 1997- 1999  
John Malonovitch 1997- 1999  
Staci Wagner 1998 - 2001  
Kristian Kilbourn 1999 - 2002  
Tammy Enos 1998- 2001  
Steven Burke, 1999-2002  
Connor O'Cleirigh 2000 -2006  
Adam Carrico 2004 – 2007  
Orit Weitzman 2004  
Blake Scalon 2005 – 2007  
Corina Lopez 2009 – 2010  
Emily Lattie 2011 –  
Julia Seay 2011 -

## **XV. SCHOOL AND DEPARTMENTAL COMMITTEES AND OFFICES**

1. Medical School Council, 1976-1978. 2003-09

2. Faculty Senate Council Rep. to Medical School Council, 1979-1982.
3. School of Medicine Rep. to Consultative Committee for the Presidential Search, 1979-1981.
4. Admissions Committee, Ph.D.- M.D. 1974-1977.
5. Department of Medicine Research and Space Committee, 1978-1979.
6. Graduate School Faculty Screening Committee, 1980-1982, Chairperson, 1983
7. School of Medicine Rep. to Consultative Committee for Provost Search, 1982.
8. Scientific Advisory Committee, 1983-1985 (Chairperson); 1993-1996; 2002-07.
9. Appointment, Promotion and Tenure Committee, 1981-1984, 2007-11.
10. Institutional Self-Study, Faculty Review Subcommittee, Chairperson, 1986-1987.
11. Clinical Research Center - Protocol Review Committee, 1990-1992.
12. Center for AIDS Research - Steering Committee, 1989-1994.
13. Clinical Research Center, Executive Committee, 2008 -2009.
14. Scientific Review Committee for DCFAR Developmental Grant Applications. 2007 – 2009.
15. Department of Medicine Appointment , promotion and tenure committee. 2012 -

## **XVI. UNIVERSITY COMMITTEES & OFFICES**

1. Faculty Rep. to Presidential Search and Selection Committee, 1979-1981.
2. Vice-Chairperson, Faculty Senate, 1979-1981.
3. Faculty Senate, 1979-82; 2000-2012.
4. Faculty Senate Council Representative from School of Medicine, 1979-1982.
5. Academic Planning Committee, 1976-1978.
6. Academic Personnel Board, 1979-1981, 1992-1994.
7. Faculty Senate Committee on Committees, 1979-1981.
8. Women's Commission, President, 1984-1986.
9. President's Ad Hoc Committee on Research and Development - Chairperson of Subcommittee on Academic Affairs, 1981-1982.
10. Intercollegiate Athletics Governing Board, 1981-1982.
11. Research Council, 1982-1985.
12. Search Committee for Vice-President for Research and Dean of the Graduate School, 1984-1985
13. Consultative Committee for V.P. for Research & Dean of Grad. School, 1984-1985 (Chair).
14. University Self Study - Committee for Intercollegiate Athletics, 1985-1986.
15. Faculty Senate Committee for Rank, Salary and Conditions of Employment, 1987-1990 (Chair).
16. Faculty Senate Professional Conduct Committee, 1992 -1994 (Chair).
17. Faculty Senate Athletic Committee, 1993 - 1997, Chair, 1993-1994.
18. Faculty Senate Committee on Academic Services, 1997-1999.
19. Faculty Senate Committee on Women and Minorities, 2000-2004 (Chair).
20. Faculty Senate Committee on Institutional Priorities, 2000-2001.
21. Faculty Senate General Welfare Committee, 2004-2012.
22. Faculty Senate Ad Hoc Committee on Academic Freedom, 2008-2009.
23. Faculty Senate Ad Hoc Committee on Evaluation of Sub Deans, 2008-2011.

## **XVII. COMMUNITY ACTIVITIES**

Health Crisis Network, Medical Advisory Committee, 1985

Women and AIDS Workshops, National Organization for Women, State and National Conferences, 1988, 1989, 1990, 1991, 1996, 1997.

**XVIII Licensure**

1984–Present CLIA certified and licensed as a Clinical Laboratory Director in Florida  
And Diplomate, American Board of Bioanalysis

**CURRICULUM VITAE**  
**Gordon Broderick, Ph.D. P.Eng.**  
(updated December 8, 2016)

**Current Appointment:**

Professor, Dept. of Psychology and Neuroscience  
College of Psychology, Nova Southeastern University,  
Fort Lauderdale, FL, USA

Business Address: Institute for Neuro-immune Medicine,  
Nova Southeastern University,  
University Park Plaza, Suite 3440  
3424 South University Drive  
Fort Lauderdale, FL 33328  
Ph. 780-492-1633 Fx. 780-407-6384  
Email. [gbroderick@nova.edu](mailto:gbroderick@nova.edu)

Citizenship: Canadian

**Education and Training:**

1980-1984	B.Eng. (Mechanical), McGill University, Montreal, Canada
1988-1989	M.Eng. (Chemical), McGill University, Montreal, Canada
1991-1994	Ph.D. (Chemical Eng.), École Polytechnique de Montréal, Montreal, Canada
2000-2001	Post-doctoral fellow (Computer Science), McGill University, Montreal, Canada
2002-2006	Post-doctoral research associate (Biochemistry), University of Alberta, Edmonton, Canada

**Licensure and Certification:**

1986-present	Ing. (P. Eng.) Ordre des Ingénieurs du Québec (#39881)
--------------	--

**Academic Appointments:**

2000 – 2001	Visiting Scientist McGill School of Computer Science / Montreal General Hospital, Montreal, Canada
2002 – 2006	Project Leader, Institute for Biomolecular Design, University of Alberta, Edmonton, Canada
2004 – 2005	Consulting Biostatistician, Alberta Transplant Applied Genomics Centre, University of Alberta, Edmonton, Canada
2006 – 2013	Associate Professor with Tenure – Dept. of Medicine, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada
2010 – Present	Associate Professor (Voluntary) – Dept. of Medicine, Miller School of Medicine, University of Miami, USA
2013 – Present	Associate Professor (Voluntary) – Dept. of Medicine, Faculty of Medicine and Dentistry, University of Alberta, Edmonton, Canada

2013 – Present	Professor – Center for Psychological Studies, Nova Southeastern University, Fort Lauderdale, FL, USA.
2013 – Present	Professor – College of Pharmacy, Nova Southeastern University, Fort Lauderdale, FL, USA.
2013 – Present	Director – Clinical Systems Biology Group, Institute for Neuro-immune Medicine, Nova Southeastern University, Fort Lauderdale, FL, USA.

**Research Appointments:**

1989 - 1995	Research Engineer/Project Leader, Noranda Technology Center, Pointe-Claire, Canada
1995 – 1999	Senior Scientist, Noranda Technology Center, Pointe-Claire, Canada
1999 – 2002	Principal Scientist, Noranda Technology Center, Pointe-Claire, Canada

**Awards/Honours:**

1980 - 1984	J.B. Lynch Foundation Award (Bachelor)
1988 - 1989	R.M. Fowler Memorial Fellowship (Masters)
1988 - 1989	Natural Sciences and Engineering Research Council of Canada Award (Masters)
1991 - 1994	Natural Sciences and Engineering Research Council of Canada Award (Ph.D)
1992 - 1993	John S. Bates Centennial Fellowship (Ph.D)
1994	Dean of Graduate Studies and Research Award for best doctoral thesis, École Polytechnique de Montréal.
2007-2008	Teacher of the Year Award (Small Group Case Study), University of Alberta Medical Students Association
2009-2010	Discovery Learning Preceptor Excellence Award, University of Alberta Medical Students Association
2010	Nightingale Award for Community Service, ME Society of Edmonton
2010-2011	Discovery Learning Preceptor Excellence Award, University of Alberta Medical Students Association.
2011-2012	Discovery Learning Preceptor Excellence Award, University of Alberta Medical Students Association.
2012-2013	Discovery Learning Preceptor Excellence Award (Year 1), University of Alberta Medical Students Association.
2012-2013	Discovery Learning Preceptor Excellence Award (Year 2), University of Alberta Medical Students Association

**Professional Memberships and Administrative Activities:**

**Memberships:**

1986-present	Member, Ordre des Ingénieurs du Québec (#39881)
2010	Member, International Society for Interferon and Cytokine Research (#2634)

Grant Review:

2006	The Centre for Complexity Science, Jerusalem, Israel
2009	U.S.-Israel Bi-national Science Foundation, Jerusalem, Israel
2009	Chief Scientist Office of the Scottish Government Health Directorate, Edinburgh, UK (2 grant proposals)
2009	Microsoft Research PhD Scholarship Programme, Microsoft Research, Cambridge, UK (2 proposals)
2009	Canadian Institutes of Health Research (CIHR)
2009	Natural Sciences and Engineering Research Council of Canada (NSERC)
2010	NIH Chronic Fatigue Review Panel, Neurotoxicology and Alcohol (NAL) Study Section, National Institutes of Health, Bethesda, MD (2 proposals).
2010	Health Research Awards, the Health Research Board (HRB) of Ireland, Dublin, Ireland
2010	Chief Scientist Office of the Scottish Government Health Directorate, Edinburgh, UK
2011	NIH Chronic Fatigue Syndrome Special Emphasis Panel (SEP), National Institutes of Health, Bethesda, MD (4 proposals).
2011	Biomedical Innovation in Public-private Research Partnership program, French National Research Agency (ANR), National Institutes of Health, Bethesda, MD (4 proposals).
2011	RCUK Shared Services Centre for Medical Research Council of the UK (RCUK SSC) Award program, Swindon, Wiltshire, UK (2 proposals).
2011	CFIDS Association of America, Application for access to CFIDS Bio-bank. Charlotte, NC, US.
2012	NIH Chronic Fatigue Syndrome Special Emphasis Panel (SEP), National Institutes of Health, Bethesda, MD (4 proposals).

Review of candidates for faculty positions.

2006	Candidate Senior Lecturer; Dept. of Bio-medical Eng., Ben Gurion University, Israel
2008	Candidate Senior Lecturer; Faculty of Life Sciences; University of Bar-Ilan, Israel
2012	Promotion to full professor; Dr. Timothy Labron, Philosophy and religious Studies, Concordia University, Edmonton, AB, Canada
2013	Promotion to full professor; Dr. Mark Van Ness, Health, Exercise, and Sport Sciences Department, University of the Pacific, Stockton, CA

National and International Advisory Committees, Scientific Societies:

2010	Invited member; International Panel for Canadian Consensus Document on ME/CFS, Vancouver, Canada (*submitting author)
2010	Invited member; US Veteran's Administration Cooperative Study Committee for Genome-wide Association in Gulf War Illness, Washington DC, USA (CSP #585)

2011	Invited panellist; US National Institutes of Health - Office of Research on Women's Health (ORWH); State of the Knowledge on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Research, Washington DC, USA
2011-2016	Invited member; Scientific Advisory Board, Solve ME/CFS Initiative, Charlotte, USA
2014	Invited panellist Technical Expert Panel (TEP); US National Institutes of Health - Agency for Healthcare Research and Quality's (AHRQ) Effective Health Care (EHC) Program: Diagnosis and Treatment of Myalgic Encephalomyelitis/Chronic Fatigue Syndrome.
2014	Invited panellist; Strategic Advisory Board, Chronic Pain and Fatigue Network, Institute of Musculoskeletal Health and Arthritis (IMHA), Canadian Institutes of Health Research.

#### **Editorial activities:**

2012-2014	Member Editorial Board, <i>Brain Behavior and Immunity</i> , Elsevier, Amsterdam, NL (impact factor 5.061)
2011-	Member Editorial Board, <i>Systems Biomedicine</i> , Landes Bioscience, Austin, TX (new journal, Editor-in-chief: Sol Efroni, PhD, Bar Ilan University, Israel)
2010-	Associate Editor, <i>BMC Systems Biology</i> , Biomed Central, London, UK (impact factor 4.064)
Current	Review activities for: Brain Behavior and Immunity (*over 10 manuscripts; impact 5.061), Journal of Immunology, Journal of Infectious Diseases, BMC Medical Genomics, American Journal of Transplantation, Cellular and Molecular Life Sciences, Molecular Medicine, The Journal of Physical Chemistry, PLoS One, Transplantation, Bioinformatics (Oxford Press), BMC Neurology, Theoretical Biology and Medical Modeling, PLoS Computational Biology

#### **Institutional Administrative and Leadership Contributions:**

##### **Organising committees**

2007	Session Chair - Numerical Techniques for Creating Biological Insights "Omic" Technologies to Phenotype Disease: A Satellite Symposium of the 9th Banff Conference on Allograft Pathology, Edmonton, AB. June 18 -19, 2007
2009	Judge's panel; Department of Medicine Research Day Graduate Student Poster Session (6 posters).
2015	Panel Member - Symposium: Optimizing Patient Outcomes: The Role of Psychology in Applying A Network Medicine Model. 2015 APA Annual Convention, Toronto, August, 2015

##### **Administrative and Research Committees**

2006- 2007	Head Computational Biology and voting member, Scientific Management Executive Committee, Alberta Transplant Applied Genomics Centre
2007	Member, Faculty Committee for University Wireless Services
2007- 2008	Member, Faculty Committee for Review of the Institute for Biomolecular Design
2007-2010	Member, Department of Medicine Research Committee
2006 -2013	Member, Division of Pulmonary Medicine
2013-	Founding member, Executive Committee, Institute for Neuro-immune Medicine, Nova Southeastern University

Student Examination committees

2011	MED526 PCC Human Sexuality II OSCE Examiner.
------	--

Graduate student academic committees.

2006-2009	Member, Ph.D. Committee – Mr. Zhipeng Cai, Dept. of Computer Science, University of Alberta
2006-2010	Member, Ph.D. Committee – Mr. Anmmd Kamruzzaman, School of Public Health, University of Alberta
2011-	Supervising Member, Ph.D. Committee – Mr. Saurabh Vashishtha, Dept. of Medicine, University of Alberta
2013-2014	Member, Ph.D. Examination Committee – Mr. Homood As Sobeai, College of Pharmacy, Nova Southeastern University

**Teaching Contributions:**

Postgraduate/graduate Advisees:

1995-1997	<u>Mr. Trevor Fenton</u> (M.Sc.) Graduate student “Finite element modeling of porous networks of composite materials” Funding: Noranda Technology Centre; NSERC My Role: Private sector co-supervisor; Primary supervisor: Dr. H. Budman (University of Waterloo)
1995-1997	<u>Mr. Timothy Knapp</u> (M.Sc.) Graduate student “Adaptive geometry neural network based control of chemical processes” Funding: Noranda Technology Centre; NSERC My Role: Private sector co-supervisor; Primary supervisor: Dr. H. Budman (University of Waterloo)
1996-1998	<u>Mr. Jean Sébastien Bolduc</u> (M.Sc.) Graduate student “Cellular-automata based nonlinear adaptive controllers” Funding: Noranda Technology Centre; NSERC My Role: Private sector co-supervisor; Primary supervisor: Dr. D. Thérien (McGill University)

1996-1998	<p><u>Ms. Bodhana Ratitch</u> (M.Sc.) Graduate student “Continuous function identification with fuzzy cellular automata” Funding: Noranda Technology Centre; NSERC My Role: Private sector co-supervisor; Primary supervisor: Dr. D. Thérien (McGill University)</p>
1997-2000	<p><u>Mr. Brendan Cote</u> (M.Sc.) Graduate student “Applicability of advanced computational networks to the modeling of complex geometry” Funding: Noranda Technology Centre My Role: Private sector co-supervisor; Primary supervisor: Dr. D. Thérien (McGill University)</p>
1997-2001	<p><u>Ms. Paule Marceau</u> (M.Sc.) Graduate student “Modeling the impact of particle size distribution of mechanical properties of wood composites” Funding: Noranda Technology Centre My Role: Private sector co-supervisor; Primary supervisor: Dr. A. Cloutier (Université Laval)</p>
2006-2007	<p><u>Mr. Eric Carpenter</u> (M.Sc.) Research fellow “Bi-stability in repair from injury and rejection of kidney allografts” Funding: University of Alberta, Start-up funding My Role: Primary Supervisor</p>
2007-2010	<p><u>Dr. J Fuite</u> (Ph.D. 2008) Research fellow “Network Theoretical Study of Neuro-immune Deficiency in Chronic Fatigue and Gulf war Illness” Funding: CFIDS Association of America My Role: Primary Supervisor</p>
2010-2011	<p><u>Dr. Scott Meadows</u> (Ph.D. 1994) Research fellow “Integrated Control and Multi-stability of the Fight or Flight Axis” Funding: U.S. Department of Defense My Role: Primary Supervisor</p>
2012-2013	<p><u>Dr. T. Craddock</u> (Ph.D. 2011) Research fellow “Integrated Control and Multi-stability of the Fight or Flight Axis” Funding: U.S. Department of Defense My Role: Primary Supervisor</p>
2011-present	<p><u>Mr. Saurabh Vashishtha</u> (M.Sc., Ph.D. candidate) Ph.D. Graduate student, “Immune Network Dynamics in Complex Stress-mediated Illness” Funding: US National Institutes of Health My Role: Primary Supervisor</p>

2011-2014	<u>Mr. Sadiq Olayinka</u> (M.Sc., M.Eng., Ph.D. candidate) Ph.D. Graduate student “The Network Dynamics of gene Regulation in Breast Cancer” Funding: NA My Role: Primary Supervisor
2013- present	Ms Gaytri Patel (Psy.D. student, Clinical Psychology, Nova Southeastern University) Research intern “Gender-specific effects of neuroinflammation on human cognition ” Funding: US Dept. of Defense. My Role: Co-supervisor
2013- present	Mr Trevor Barker (Psy.D. student, Clinical Psychology, Nova Southeastern University) Research intern “Gender-specific effects of neuroinflammation on human cognition ” Funding: US Dept. of Defense. My Role: Co-supervisor
2013- present	Mr Tory Toole (Ph.D. student, Clinical Psychology, Nova Southeastern University) Research intern “Neuroinflammation and pain pathways ” Funding: US Dept. of Defense. My Role: Co-supervisor
2013- present	Ms Alexia Holovatyk (Ph.D. student, Clinical Psychology, Nova Southeastern University) Research intern “Chronic fatigue, neuroinflammation and their effects on human cognition ” Funding: US Dept. of Defense. My Role: Co-supervisor

Undergraduate Advisees:

1995-1996	Mr. Bernhard Handle (senior year metallurgical engineering design project) Undergraduate research assistant “Hydrometallurgical electro-refining of high-purity tellurium” Funding: Noranda Technology Centre, Principal My Role: Private sector co-supervisor; Primary supervisor Dr. P. Paschen, Montan-University, Leoben, Austria
2007	Ms. Ann Aspler (M.Sc.) and Ms Carly Bolshin (B.Sc.) (M.D. students, class of 2010) Undergraduate research assistants “Evidence of Altered Neuroendocrine- immune Function in a Population-based Study of Chronic Fatigue Syndrome”

	<p>Funding: University of Alberta, start-up funds My Role: Primary Supervisor</p>
2008-2009	<p>Mr. Michael Gallagher (M.D. student, class of 2010) Undergraduate research assistant “Immune Biomarkers in Gulf War Syndrome” Funding: CFIDS Association of America, U.S. Dept. of Defense My Role: Primary Supervisor</p>
2009	<p>Ms. Andrea Kreitz (B.Sc., M.D. student, class of 2011) Undergraduate research assistant “Emergent Patterns of Cytokine Expression in Chronic Fatigue Syndrome and Gulf War Illness” Funding: CFIDS Association of America; <i>Recipient of the PANDORA Summer Research Award</i> My Role: Primary Supervisor</p>
2009	<p>Ms. Christina Yang (M.Sc., M.D. student, class of 2011) Undergraduate research assistant “A Study of Cognitive Deficits in Patients with Chronic Fatigue Syndrome” Funding: CFIDS Association of America; <i>Recipient of the Henry Anton Deutsch Medical Summer Research Award</i> My Role: Primary Supervisor</p>
2010-2011	<p>Mr. Scott De Graff (B.Sc., M.D. student, class of 2012) Undergraduate research assistant “Models for Cardiovascular Dysregulation in Chronic Fatigue Syndrome” Funding: CFIDS Association of America My Role: Primary Supervisor</p>
2011-2014	<p>Ms. Jeanna Harvey (B.Sc., M.D. student, class of 2014, University of Miami) Undergraduate research assistant “Exercise Induced Immune Gene Expression in Gulf War Illness” Funding: US Veterans Affairs My Role: Co-supervisor</p>
2012	<p>Ms. AnneLiese Smylie (B.Sc. Honours, M.D. student, class of 2015) Undergraduate research assistant “A Cytokine-based Screening Test for Gulf War Illness” Funding: Alberta Innovates Health Solutions (AIHS); <i>Recipient of an AIHS Summer Studentship Research Award.</i> My Role: Primary Supervisor</p>
2012	<p>Mr. Henrique Fernandes (B.Eng. Distinction, M.D. student, class of 2015) Undergraduate research assistant “Identifying Common Molecular Traits and Emergent Patient Sub-groups in Chronic Fatigue Syndrome”</p>

Funding: Canadian Institutes for Health Research (CIHR);  
*Recipient of a CIHR Health Professional Student Research Award.*

My Role: Primary Supervisor

- |           |  |
|-----------|--|
| 2013      | Mr. Lundy McKibbin (B.Sc. Distinction, M.D. student, class of 2016)<br>Undergraduate research assistant “A study of the effects of PTSD co-morbidity on immune signature in Gulf War Illness”<br>Funding: US. Dept. of Defense.<br>My Role: Primary Supervisor   |
| 2013      | Mr. Simar Singh (M.Sc. Distinction, Stanford University)<br>Graduate research assistant “A study of neuro-inflammatory mechanisms in Gulf War Illness”<br>Funding: US. Dept. of Defense.<br>My Role: Primary Supervisor  |
| 2013      | Ms. Alanna Bowie (B.Sc. Distinction, M.D. student, class of 2016)<br>Undergraduate research assistant “Prognostic Clinical Markers for Early Detection Chronic Sequela from Infectious Mononucleosis”<br>Funding: Alberta Innovates Health Solutions (AIHS); <i>Recipient of an AIHS Summer Studentship Research Award.</i><br>My Role: Primary Supervisor       |
| 2013      | Ms. Melissa Hwang (B.Sc. Distinction, M.D. student, class of 2016)<br>Undergraduate research assistant “Mechanisms of Immune-endocrine Interaction in Episodic Exacerbation of Chronic Fatigue Syndrome”<br>Funding: Faculty of Medicine and Dentistry; <i>Recipient of the David and Beatrice Reidford Research Scholarship.</i><br>My Role: Primary Supervisor |
| 2013-2014 | Mr. Mark Rice (Computer Science student, class of 2014)<br>Undergraduate research assistant “Large-scale Circuit Models of Physiological Regulation”<br>Funding: US Dept. of Defense<br>My Role: Primary Supervisor  |
| 2013-2014 | Mr. Ryan del Rosario (Computer Science student, class of 2014)<br>Undergraduate research assistant “Large-scale Circuit Models of Physiological Regulation”<br>Funding: US Dept. of Defense<br>My Role: Primary Supervisor   |
| 2013-2014 | Mr. Patrick Gourdet (Computer Science student, class of 2014)<br>Undergraduate research assistant “Large-scale Circuit Models of Physiological Regulation”   |

Funding: US Dept. of Defense  
My Role: Primary Supervisor

- 2013 Ms. Lindsey Russell (B.Sc. Honours (cell biology), M.D. student, class of 2016)  
Undergraduate research assistant “Gulf War Illness; a comprehensive model incorporating insults to cardiac, neurological and immune function”  
Funding: Alberta Innovates Health Solutions (AIHS); *Recipient of an AIHS Summer Studentship Research Award.*  
My Role: Primary Supervisor
- 2013-2014 Mr Samuel Thomas (B.Sc. student, Behavioral Neuroscience, class of 2015, Nova Southeastern University)  
Research intern “Neuroinflammatory cascades in the brain ”  
Funding: US Dept. of Defense.  
My Role: Co-supervisor
- 2014 Mr Shane Hills (B.Sc. Physics, Queen’s University 2012)  
Research intern “Mapping Neurological Response to Exercise Challenge in Gulf War Illness”  
Funding: CFIDS Association of America/ Univ. of Wisconsin.  
My Role: Supervisor

Classroom Instruction (undergraduate):

- 2007 DMED 512 - Infection, Immunity and Inflammation, Small Group Facilitator, University of Alberta, Edmonton, AB  
Overall effectiveness rating: 9.2/10.0
- DMED 514 – Cardiovascular, Pulmonary and Renal Systems, Small Group Facilitator, University of Alberta, Edmonton, AB:  
Renal Block; Overall effectiveness rating 9.4/10.0  
Pulmonary Block; Overall effectiveness rating 10.0/10.0
- 2008 MED516 /DDS510 Patient-centred Care I, Small Group Facilitator, University of Alberta, Edmonton, AB  
Overall effectiveness rating: Not transmitted
- MED526 /DDS520 Patient-centred Care II, Small Group Facilitator, University of Alberta, Edmonton, AB  
Overall effectiveness rating: Not transmitted
- MED521 /DDS506 – Gastroenterology and Nutrition, Small Group Facilitator, University of Alberta, Edmonton, AB  
Overall effectiveness rating: 9.8/10.0
- DMED 514 – Cardiovascular, Pulmonary and Renal Systems, Small Group Facilitator, University of Alberta, Edmonton, AB:  
Renal Block; Overall effectiveness rating 9.4/10.0

Pulmonary Block; Overall effectiveness rating 9.1/10.0  
Cardiology Block; Overall effectiveness rating 9.4/10.0.

Substitute Teaching as Discovery Learning (DL) small group  
facilitator in:

DMED 512 - Infection, Immunity and Inflammation

DMED 513 – Endocrinology and Metabolism

2009

DMED 512 - Infection, Immunity and Inflammation, Small  
Group Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 9.4/10.0

MED522 Reproductive Medicine and Urology, Small Group  
Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 10.0/10.0

MED526/DDS520 Patient-centred Care, Small Group Facilitator,  
University of Alberta, Edmonton, AB

Overall effectiveness rating: Not transmitted

DMED 514 – MED524 Neurosciences and Organs of Special  
Senses (A), Small Group Facilitator, University of Alberta,  
Edmonton, AB

Overall effectiveness rating: 10.0/10.0

DMED 514 – MED524 Neurosciences and Organs of Special  
Senses (B), Small Group Facilitator, University of Alberta,  
Edmonton, AB

Overall effectiveness rating: Not transmitted

MED515 Community Health, Small Group Facilitator, University  
of Alberta, Edmonton, AB

Overall effectiveness rating: 9.8/10.0

MED526/DDS520 Patient-centred Care II, Small Group  
Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 8.0/10.0

2010

DMED 512 - Infection, Immunity and Inflammation, Small  
Group Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 10.0/10.0

MED522 Reproductive Medicine and Urology, Small Group  
Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 9.8/10.0

MED526 Patient-centred Care, Small Group Facilitator,  
University of Alberta, Edmonton, AB (\*\* 2 groups in parallel)

Overall effectiveness rating: 10.0/10.0

DMED 514 – Cardiovascular, Pulmonary and Renal Systems  
(Cardiovascular block), Small Group Facilitator, University of  
Alberta, Edmonton, AB

Overall effectiveness rating: 9.8/10.0

MED524 Neurosciences and Organs of Special Senses (A), Small  
Group Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 9.4/10.0

MED526/DDS520 Patient-centred Care, Small Group Facilitator,  
University of Alberta, Edmonton, AB

Overall effectiveness rating: (no score provided)

2011

DMED 512 - Infection, Immunity and Inflammation, Small  
Group Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 10.0/10.0

MED522 Reproductive Medicine and Urology, Small Group  
Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 10.0/10.0

MED526 Patient-centred Care, Small Group Facilitator,  
University of Alberta, Edmonton, AB (\*\* 2 groups in parallel)

Overall effectiveness rating: 10.0/10.0

2012

DMED 512 - Infection, Immunity and Inflammation, Small  
Group Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 10.0/10.0

MED522 Reproductive Medicine and Urology, Small Group  
Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: 9.89/10.0

MED516 Patient-centred Care, Small Group Facilitator,  
University of Alberta, Edmonton, AB

(2 sessions: Medical Ethics, Patient Advocacy)

Overall effectiveness rating: Ongoing

MED 523/DDS 523 - Musculoskeletal System, Small Group  
Facilitator, University of Alberta, Edmonton, AB

Overall effectiveness rating: Ongoing

Classroom Instruction (graduate):

1995

MTH 6301 Statistical Design and Analysis of Experiments  
Dept. Appl. Mathematics and Industrial Engineering,  
École Polytechnique de Montréal, Montreal, Canada.

2013

MED 573 An Introduction to Clinical Systems Biology  
Dept. of Medicine, Faculty of Medicine and Dentistry  
University of Alberta, Edmonton, Canada.

**Research Grants:**

Currently Active Grants:

01/2013-01/2017	U.S. Department of Defense Title: "GW120045 -Understanding Gulf War Illness: An Integrative Modeling Approach." Role: Co-PI. - Director Computational Core Total Budget: CAN\$: 1,200,000 sub-award (\$4,764,000 USD)
04/2014-03/2018	U.S. Department of Veterans Affairs Title: "VA/ CSR&D Award for Research on GWI - Women vs. Men with GWI: Differences in Computational Models and Therapeutic Target." Role: Co-PI. - Director Computational Core Total Budget: CAN\$: 2,200,000 (\$2,000,000 USD)
04/2014-04/2016	Nova Southeastern University President's Award Title: "Investigating the mTBI neuroinflammatory response to develop novel diagnostics" Role: Co-Inv. Total Budget: \$10,000 USD
06/2014-03/2017	U.S. Department of Defense Title: "GW130053 - Epigenetic Mediation of Endocrine and Immune Response in an Animal Model of Gulf War Illness" Role: Co-PI. - Director Computational Core Total Budget: \$140,000 USD sub-award
08/2014-07/2018	U.S. National Institutes of Health (NIH) Title: "Gender Differences in ME/CFS (R01)" Role: Co-PI - Director Computational Core Total Budget: CAN\$: 2,300,000 USD
10/2014-09/2018	U.S. Department of Veterans Affairs Title: "VA/ CSR&D Award for Research on GWI - A Translational Medicine Approach to Gulf War Illness: From Cells to Therapy." Role: Co-PI. - Director Computational Core Total Budget: CAN\$: 2,200,000 (\$2,000,000 USD)
7/2015-06/2018	U.S. Department of Defense Title: "GW140142 - High Fidelity Design of Multi-modal Restorative Interventions in Gulf War Illness" Role: PI. Total Budget: \$810,000 USD

7/2015-06/2018	U.S. Department of Defense Title: "GW140153P1 - Testing the Model: A Phase I/II Randomized Double Blind Placebo Control Trial of Therapeutics: Liposomal Glutathione and Curcumin" Role: Co-Inv. Total Budget: \$1,073,000 USD
9/2016-9/2019	U.S. Department of Defense Title: "GW - Improving Diagnostics and Treatments for GWI Females by Accounting for the Effects of PTSD" Role: Co-Inv. Total Budget: \$658,000 USD
9/2016-9/2019	U.S. Department of Defense Title: "GW140153P1 - Disentangling the Effects of PTSD from GWI for Improved Diagnostics and Treatments" Role: Co-Inv. Total Budget: \$594,000 USD
<u>Completed Grants:</u>	
07/2006-06/2009	University of Alberta, Faculty of Medicine and Dentistry (Start-up Grant N031000099) Title: "Mechanistic analysis of microarray signatures in transplant rejection" Role: Principal Investigator Total Budget: CAN\$: 60,000
07/2006-12/2007	Genome Canada Title: "Transplant Transcriptome Project" Role: Co-investigator Total Budget: CAN\$: 90,000
01/2008-01/2010	U.S. National Institutes of Health (NIH) Title: "A Prospective Study of CFS in Adolescents" Role: Consultant Total Budget: CAN\$: 5,000 consultancy (\$5,000 USD)
03/2009-02/2011	CFIDS Association of America Title: "Molecular Patterns of Persistent Immune Activation in a Post-infectious Adolescent Cohort" Role: Principal Investigator Total Budget: CAN\$: 156,000 sub-award (\$125,000 USD)
06/2009-08/2009	University of Alberta, Faculty of Medicine and Dentistry Henry Anton Deutsch Medical Summer Research Award in support of summer studentships for Ms. Christina Yang Role: Principal Investigator Total Budget: CAN\$: 2,400

07/2009-06/2012*	U.S. Department of Defense Title: "The Use of Comprehensive Molecular Profiling with Network and Control Theory to Better Understand GWI and Model Therapeutic Strategies" Role: Co-PI Total Budget: CAN\$: 164,000 sub-award (\$130,000 USD) * Extended 1 year wo additional funding
05/2009-04/2014	Alberta Heritage Foundation for Medical Research Title: "Etiology of Inflammatory Bowel Disease: Gene, Microbe, and Environment Interactions" Role: Co-investigator Total Budget: CAN\$: 200,000 sub-award (1.0 FTE Research Associate)
05/2009-04/2013	Patient Alliance for Neuroendocrine-immune Disorders Organization for Research and Advocacy (PANDORA) Research Award in Support of summer studentships in Broderick laboratory Title: "Biomarkers for Gulf War Illness" Role: Principal Investigator/ Program Director Total Budget: CAN\$: 3,500 USD
07/2011-06/2012	U.S. Department of Defense Title: "Gulf War Illness Research Program Consortium Development Award" Role: Co-Inv. - Director Computational Core Total Budget: CAN\$: 15,000 (\$262,700USD total travel award)
09/2010-08/2013	U.S. Department of Defense Title: "Theory-driven Models for Correcting "Fight or Flight" Imbalance in Gulf War Illness." Role: Principal Investigator Total Budget: CAN\$: 701,000 (\$679,000 USD)
10/2010-09/2014	U.S. National Institutes of Health (NIH) Title: "Study of Chronic Fatigue Syndrome using comprehensive molecular profiling with network and control theory (R01)" Role: Co-PI Total Budget: CAN\$: 398,000 sub-award (\$386,000 USD)
06/2012-07/2013	CFIDS Association of America Title: "Post-exertion malaise in CFS: A systems biology approach to understanding brain, inflammation and behavior interactions" Role: Co-Investigator Total Budget: CAN\$: 20,000 sub-award (\$20,000 USD)
08/2012-07/2014	U.S. National Institutes of Health (NIH)

Title: "Microbial Translocation in Chronic Fatigue Syndrome (R21)"

Role: Co-PI

Total Budget: CAN\$: 100,000 sub-award (\$362,000 USD)

**Publications:**

Peer-Reviewed Original Research (trainees directly supervised by me are underlined):

1. Broderick G, Valade JL, Paris J. High Yield Sulphite Pulping Based on a Plackett-Burman Design. Pulp and Paper Canada, 1993; **94(9)**: T248-251.
2. Broderick G, Paris J, Valade JL. A Composite Representation of Pulp Quality. Chemometrics and Intelligent Laboratory Systems, 1995; **29(1)**: 19-28.
3. Broderick G, Paris J, Valade JL. Factors Affecting the Optimal Performance of a High-Yield Pulping Operation. Canadian Journal of Chemical Engineering, 1995; **73(3)**: 391-399.
4. Broderick G, Paris J, Valade JL, Wood J. Applying Latent Vector Analysis to Pulp Characterization. Paperi ja Puu, 1995; **77(6-7)**: 410-418.
5. Broderick G, Paris J, Valade JL. Fibre Development in Chemimechanical Pulp Refining, Tappi Journal, 1996; **79(4)**: 193-201.
6. Broderick G, Paris J, Valade JL. The Impact of High-yield Pulping Pretreatment Conditions on Spent Liquor Toxicity and Oxygen Demand. Paperi ja Puu, 1996; **78(1-2)**: 43-50.
7. Broderick G, Paris J, Valade JL, Wood J. Linking the Fibre Characteristics and Handsheet Properties of a High-Yield Pulp. Tappi Journal, 1996; **79(1)**: 161- 169.
8. Tessier P, Broderick G. Industrial Implementation of Motor Load and Freeness Control of Chemimechanical Pulp Refiners. Tappi Journal, 1997; **80(12)**: 135-142.
9. Handle B, Broderick G, Paschen P. A Statistical Response Surface Study of the Tellurium Electrowinning Process. Hydrometallurgy, 1997; **(46)**: 105-120.
10. Broderick G, Lanouette R, Valade JL. Optimizing Refiner Operation with Statistical Modelling. Canadian Journal of Chemical Engineering, 1997; **75(1)**: 79-87.
11. Broderick G, Cacchione E, Heroux Y. The Importance of Distribution Statistics in the Characterisation of Chip Quality. Tappi Journal, 1998; **81(2)**: 131-142.
12. Broderick G, Handle B, Paschen P. Strategies for Optimal Operation of the Tellurium Electrowinning Process. Metallurgical and Materials Transactions B, 1999; **30B(1)**: 5-13.
13. Tessier P, Broderick G, Desrochers C. Chip Size Distribution for an Ultra-high-yield Sulfite Process. Tappi Journal, 2000; **83(4)**: 76.
14. Knapp T, Budman H, Broderick G. Adaptive Control of a CSTR with a Neural Network Model. Journal of Process Control, 2001; **11**: 53-68.

15. Tessier P, Broderick G, Plouffe P. Competitive Analysis of North-American Newsprint Producers Using Composite Statistical Indicators of Product and Process Performance. Tappi Journal, 2001; **84(3)**: 81.
16. Tessier P, Broderick G, Plouffe P. Competitive Analysis of North-American Newsprint Producers Using Composite Statistical Indicators of Product and Process Performance. Pulp & Paper Canada, 2002; **103(5)**: T140-143.
17. Fenton TE, Budman HM, Pritzker MD, Bernard E, Broderick G. Modeling and Simulation of Oriented Strandboard Pressing. Ind Eng Chem Res, 2003; **42(21)**: 5229 – 5238.

***Life science works***

18. Broderick G, Ru'aini M, Chan E, Ellison MJ. A Life-like Virtual Cell Membrane Using Discrete Automata. *Invited Paper*, In Silico Biology, 2004; **5**: 0016.
19. Lopez-Campistrous A, Semchuk P, Burke L, Palmer-Stone T, Brokx SJ, Broderick G, Bottorff D, Weiner JH, Ellison MJ. Localization, Annotation & Comparison of the Escherichia coli K-12 Proteome under Two States of Growth. Mol Cell Proteomics, 2005 May 19; 10.1074/mcp.D500006-MCP200.
20. Broderick G, Craddock RC, Whistler T, Taylor R, Klimas N, Unger ER. Identifying illness parameters in fatigue syndromes using classical projection methods. Pharmacogenomics, 2006; **7(3)**: 407-419.
21. Whistler T, Craddock RC, Taylor R, Broderick G, Klimas N, Unger ER. Gene expression correlates of fatigue. Pharmacogenomics, 2006; **7(3)**: 395-405.
22. Craddock RC, Taylor R, Broderick G, Whistler T, Klimas N, Unger ER. Exploration of statistical dependence between illness parameters using the Entropy Correlation Coefficient. Pharmacogenomics, 2006; **7(3)**: 421-428.
23. Mueller TF, Einecke G, Reeve J, Sis B, Mengel M, Jhangri G, Bunnag S, Cruz, J, Wishart D, Meng C, Broderick G, Kaplan B, Halloran PF. Microarray analysis of rejection in human kidney transplants using pathogenesis-based transcripts sets. Am J Transplant, 2007; **7(12)**: 2712-2722.
24. Famulski KS, Broderick G, Einecke G, Hayl K, Cruz J, Sis B, Mengel M Halloran PF. Transcriptome analysis reveals heterogeneity in the injury response of kidney transplants. Am J Transplant, 2007; **7**: 1–13.
25. Einecke G, Broderick G, Sis B, Halloran PF. Early loss of renal transcripts in kidney allografts: relationship to morphologic changes and alloimmune effector mechanisms. Am J Transplant, 2007; **7(5)**: 1121–1130.
26. Ben-Zvi A, Vernon SD, Broderick G. Model-based Therapeutic Correction of Hypothalamic Pituitary Adrenal Axis Dysfunction. PLoS Comput Biol, 2008; **5(1)**: e1000273. doi:10.1371/journal.pcbi.1000273.

27. Aspler AL, Bolshin C, Vernon SD, Broderick G. Evidence of Inflammatory Immune Signaling in Chronic Fatigue Syndrome: A Pilot Study of Gene Expression in Peripheral Blood. Behav Brain Funct, 2008 Sep 26; **4(1)**: 44. doi:10.1186/1744-9081-4-44. [18 citations, May, 2011]
28. Fuite J, Vernon SD, Broderick G. Neuroendocrine and Immune Network Re-modeling in Chronic Fatigue Syndrome: An Exploratory Analysis. *Invited submission*, Genomics 2008; **92(6)**: 393-399. doi:10.1016/j.ygeno.2008.08.008 (issue cover).
29. Zhao J, Ridgway D, Broderick G, Kovalenko A, Ellison M. Extraction of elementary rate constants from global network analysis of E. coli central metabolism. BMC Systems Biology, 2008; **2**: 41, doi:10.1186/1752-0509-2-41.
30. Ridgway D, Broderick G, Ru'aini M, Winter P, Lopez-Campistrous A, Ellison MJ. Coarse-grained molecular simulation of diffusion and reaction kinetics in a crowded virtual cytoplasm. Biophys J, 2008 May 15; **94(10)**: 3748-59.
31. Broderick G, Fuite J, Kreitz A, Vernon SD, Klimas N, Fletcher MA. Formal Analysis of Cytokine Networks in Chronic Fatigue Syndrome. Brain Behav Immun, 2010 Oct; **24(7)**: 1209-17.
32. Fletcher MA, Zeng XR, Maher K, Levis S, Barry H, Antoni M, Broderick G, Klimas NG. Biomarkers in chronic fatigue syndrome: Evaluation of natural killer cell function and dipeptyl peptidase IV. PLoS ONE, 25 May, 2010; 10.1371/journal.pone.0010817.
33. Nakamura T, Schwander SK, Donnelly R, Ortega F, Togo F, Broderick G, Yamamoto Y, Cherniack NS, Rapoport D, Natelson BH. Cytokines across the night in chronic fatigue syndrome with and without Fibromyalgia. Clin Vaccine Immunol. 2010 Apr; **17(4)**: 582-7.
34. Fletcher MA, Rosenthal M, Antoni M, Ironson G, Zeng XR, Barnes Z, Harvey JM, Hurwitz B, Levis S, Broderick G, Klimas NG. Plasma neuropeptide Y: a biomarker for symptom severity in chronic fatigue syndrome. Behav Brain Funct, 2010 Dec 29; **6(1)**: 76.
35. Folcik VA, Broderick G, Mohan S, Block B, Ekbote C, Doolittle J, Khoury M, Davis L, Marsh CB. Using an agent-based model to analyze the dynamic communication network of the immune response. Theor Biol Med Model, 2011 Jan 19; **8**:1.
36. Broderick G, Kreitz A, Fuite J, Fletcher MA, Vernon SD, Klimas N. A pilot study of immune network remodeling under challenge in Gulf War Illness. Brain Behav Immun. 2011 Feb; **25(2)**: 302-13.
37. Carruthers BM, van de Sande MI, De Meirleir KL, Klimas NG, Broderick G et al. Myalgic encephalomyelitis: International Consensus Criteria. J Intern Med. 2011 Oct; **270(4)**: 327-38.
38. Broderick G, Katz BZ, Fernandes H, Fletcher MA, Klimas NG, Smith FA, O'Gorman MRG, Vernon SD, Taylor R. Cytokine Expression Profiles of Immune Imbalance in Post-mononucleosis Chronic Fatigue. J Transl Med. 2012, **10**: 191.
39. Broderick G, Ben-Hamo R, Vashishtha S, Efroni S, Nathanson L, Barnes Z, Fletcher MA, Klimas NG. Altered Immune Pathway Activity under Exercise Challenge in Gulf War Illness: An Exploratory Analysis. Brain Behav Immun. 2013, **28**: 159-169.

40. Smylie AL, Broderick G, Fernandes H, Razdan S, Barnes Z, Collado F, Sol C, Fletcher MA, Klimas NG. A Comparison of Sex-specific Immune Signatures in Gulf War Illness and Chronic Fatigue Syndrome. BMC Immunol 2013, **14**:29.
41. Fritsch P, Craddock TJ, del Rosario RM, Rice MA, Smylie A, Folcik VA, de Vries G, Fletcher MA, Klimas NG, Broderick G. Succumbing to the laws of attraction: Exploring the sometimes pathogenic versatility of discrete immune logic. Sys Biomed 2013, **1(3)**:1.
42. Craddock TJA, Fritsch P, Rice MA Jr, del Rosario RM, Miller DB, Fletcher MA, Klimas NG, Broderick G. A Role for Homeostatic Drive in the Perpetuation of Complex Chronic Illness: Gulf War Illness and Chronic Fatigue Syndrome. PLoS One 2014, **9(1)**: e84839.
43. Vashishtha S, Broderick G, Craddock TJA, Fletcher MA, Klimas NG. Inferring Broad Regulatory Biology from Time Course Data: Have We Reached an Upper Bound under Constraints Typical of In Vivo Studies? PLoS ONE 2015, **10(5)**: e0127364.
44. Craddock TJA, Harvey JM, Nathanson L, Barnes ZM, Klimas NG, Fletcher MA, Broderick G. Using gene expression signatures to identify novel treatment strategies in gulf war illness. BMC BMC Med Genomics. 2015 Jul 9; **8(1)**: 36.
45. Craddock TJA, del Rosario R, Rice M, Zysman J, Fletcher MA, Klimas NG, Broderick G. Achieving Remission in Gulf War Illness: A Simulation-Based Approach to Treatment Design. PLoS ONE 2015 **10(7)**: e0132774.
46. Russell L, Broderick G, Taylor R, Fernandes H, Harvey J, Barnes Z, Smylie AL, Collado F, Balbin E, Katz BZ, Klimas NG, Fletcher MA. Illness Progression in Chronic Fatigue Syndrome: a Shifting Immune Baseline. BMC Immunology, 2016, **17**: 3.
47. Rice M, del Rosario R, Craddock TJA, Barnes ZM, Klimas NG, Fletcher MA, Zysman J, Broderick G. Gulf War Illness: is There Lasting Damage to Endocrine-immune Circuitry? Sys Biomed 2016, **2(4)**: 80-89.
48. Harvey JM, Bowie A, Katz BZ, O’Gorman MRG, Taylor R, Fletcher MA, Klimas NG, Broderick G. Tracking Post-infectious Fatigue in Clinic using Routine Clinical Lab Tests. BMC Pediatrics 2016, **16**:54.
49. Barker TT, Barker GP, Russo SA, Rice MA Jr., Jeffrey MG, Broderick G, Craddock TJA. Do Lingering Effects of Multiple Concussions Exist? A Case Matched Design. PLoS ONE, 2016. [Under Review](#).
50. Nierenberg B, Cooper S, Feuer SJ, Broderick G. Applying Network Medicine to Chronic Illness: A Model for Integrating Psychology into Routine Care. Amer Psych, 2015. [Under review](#).
51. Toole JT, Rice MA Jr., Craddock TJA, Nierenberg B, Klimas NG, Fletcher MA, Zysman J, Morris M, Broderick G. Breaking away: the role of homeostatic drive in perpetuating depression. Clin Psychol Sci 2016, [Under review](#).

52. Lattie EG, Broderick G, Fletcher MA, Klimas NG, Antoni M. Symptom and Cytokine Modeling in Adult Women with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome. Brain Behav Immun 2016, [Under review](#).
53. Cook DB, Light A, Light K, Broderick G, Shields MR, Dougherty RJ, Meyer JD, VanRiper S, Stegner AJ, Ellingson LD, Vernon SD. Functional Neural Consequences of Post-Exertion Malaise in ME/CFS. TBD 2016. [In preparation](#).
54. O'Callaghan JP, Kelly KA, Locker AR, Michalovicz L, Vrana KE, Broderick G, Sullivan K, Miller DB. The ALDH1L1 Bac-TRAP mouse as a tool to assess astrocyte specific transcriptome responses to neurotoxicity. TBD 2016. [In preparation](#)
55. Craddock TJA, Russell L Harvey JM, Singh SJ, Rice MA Jr., del Rosario RM, Klimas NG, Fletcher MA, Broderick G. Fire in the Head: Exploring the Role of Homeostatic Drive in the Perpetuation of Neuroinflammation and Brain Disorders. PLoS One. [In preparation](#)
56. Vashishtha S, Barnes ZM, Harvey J, Zeng XR, Collado F, Craddock TJA, Klimas NG, Fletcher MA, Broderick G. Subversion of immune communication during exercise in GWI. Sci Rep. [In preparation](#)
57. Vashishtha S, Russell G, O'Callaghan J, Miller DB, Fletcher MA, Klimas NG, Morris M, Broderick G. Tracking immune network response to stress and exposure across the blood-brain barrier. J Neurochem 2015. [In preparation](#)
58. Shinn E, Broderick G, Harris B, Fellman B, Urbauer D, Moulder S, Paterson D, Archer J, Hernandez L, Johnson A, Symmans WF. Time-dependent patterns of discontinuation from oral endocrine therapy in non-metastatic ER+ breast cancer patients. TBD. [In preparation](#).
59. Vashishtha S, Harvey J, Barnes ZM, Zeng XR, Craddock TJA, Klimas NG, Fletcher MA, Broderick G. Hot-wiring the immune communication networks in ME/CFS. Brain Behavior and Immunity. [In preparation](#).
60. Vashishtha S, Harvey J, Barnes ZM, Zeng XR, Klimas NG, Fletcher MA, Broderick G. Fatigue severity and cellular dynamics of immune response in ME/CFS. TBD [In preparation](#).
61. Barnes ZM, Broderick G, Vashishtha S, Russell L, Harvey JM, Klimas NG, Fletcher MA. Sex-hormone mediation of immune function as a driver of ME/CFS severity. Brain Behavior and Immunity. [In preparation](#).

Invited Reviews and Editorials:

62. Broderick G, Rubin E. The Realistic Modelling of Biological Systems: A Workshop Synopsis. ComplexUs, 2006; **3**: 217–230.
63. Ridgway D, Broderick G, Ellison MJ. Accommodating space, time and randomness in network simulation. Invited paper. Curr Opin Biotechnol, 2006; **17**: 1-6.
64. Broderick G, Fuite J, Kreitz A, Vernon SD, Klimas N, Fletcher MA. Circadian rhythms in cytokine secretion in chronic fatigue syndrome. Brain Behav Immun. 2010 Jun 19; **24(7)**: 1219.

65. Broderick G. Observations on Rituximab's Early Success. Research 1<sup>st</sup>, The CFIDS Association of America. <http://www.research1st.com/2011/10/21/broderick/>
66. Klimas NG, Broderick G, Fletcher MA. Biomarkers for chronic fatigue. Brain Behav Immun. 2012; **26(8)**: 1202-10.
67. Broderick G, corresponding author with International Consensus Panel. Response to 'A controversial consensus'; By the International Consensus Panel. J Intern Med. 2012 Feb; **271(2)**: 213-7.
68. Broderick G. A moving target: taking aim at the regulatory dynamics of illness. Brain Behav Immun. 2012 Oct; **26(7)**: 1045-6
69. Broderick G, Craddock JA. Systems Biology of Complex Symptom Profiles: Capturing Interactivity across Behavior, Brain and Immune Regulation. Brain Behav Immun. 2013 Mar; **29**:1-8.

Book Chapters:

1. Broderick G, Fletcher MA, Gallgher M, Barnes Z, Vernon SD, Klimas NG. Exploring the Diagnostic Potential of Immune Biomarker Coexpression in Gulf War Illness. In: Yan Q. (Ed.), Psychoneuroimmunology: Methods and Protocols (Methods in Molecular Biology), Springer, New York, NY, 2012, Part II, Chap. 8: 145-164.
2. Fletcher MA, Barnes Z, Broderick G, Klimas NG. Psychoneuroimmunology and Natural Killer Cells: The Chromium Release Whole Blood Assay. In: Yan Q. (Ed.), Psychoneuroimmunology: Methods and Protocols (Methods in Molecular Biology), Springer, New York, NY, 2012, Part III, Chap. 16: 313-324.

Abstracts/ Proceedings:

Broderick G, Valade JL, Paris J. Identifying Dominant Process Factors in High Yield Sulphite Pulping Using a Plackett-Burman Design. Proc.41st Canadian Chemical Engineering Conf., Vancouver, Oct. 6-9, 1991: 19-5.  
Presented: Oral Podium Presentation.

Broderick G, Paris J, Valade JL. The Impact of Processing Conditions on Spent Sulphite Liquor Toxicity. Proc.43rd Canadian Chemical Engineering Conf., Ottawa, Ont., Oct. 3-6, 1993: 206.  
Presented: Oral Podium Presentation.

Broderick G, Tessier P. On-line Fibre Quality Sensors: What They Should Measure and Why. Pulp Expert User Seminar, Pulp Expert Oy, Montreal, September 30, 1996.  
Presented: Oral Podium Presentation.

Broderick G. PLS and Latent Vector Modelling: A Decision Support Tool. Technical Session, CPPA Process Control Committee, Vancouver, September 23, 1996.  
Presented: Oral Podium Presentation.

Tessier P, Broderick G, Desrochers C, Bussiere S. Motor Load and Freeness Control of Chemimechanical Pulp Refining: Industrial Results. European Control Conference, Brussels, Belgium, July 1-4, 1997.

Presented: Oral Podium Presentation.

Bolduc JS, Broderick G, Therien. From stability to tracking: Robustness of cellular automata based controllers. Proc. ICIPS '97, 1997 IEEE International Conference on Intelligent Processing Systems. Beijing, China, Oct. 28-31, 1997, vol. 1: 619 - 624.

Presented: Oral Podium Presentation.

Tessier P, Broderick G. Example Applications of Multivariate Statistical Analysis in the Pulp and Paper Industry. Proc. PAPTAC Conf., Montreal, January 31-Feb 4, 2000.

Presented: Oral Podium Presentation.

Graff S, Broderick G, Tessier P, Leger R. Predictive Models of Effluent Treatment at Fraser Paper in Edmundston. Proc. Tappi 2000 Environmental Conf., Denver, CO, May 7-10, 2000.

Presented: Oral Podium Presentation.

Pudlas M, Broderick G, Tessier P. Assessing Competitive Position Using Multivariate Statistical Analysis of Pulp Quality. Proc. PACWEST Conference 2000, Pulp and Paper Technical Assoc. of Canada, Jasper, A.B., June 1-4, 2000.

Presented: Oral Podium Presentation.

### ***Life science works***

Ellison MJ, Broderick, G, Ru'aini M, Bottorff D, Weiner J. A massively Parallel Arithmetic Approach to Whole-cell Modelling in 4-D. First Int. E.coli. Alliance (IECA) Conference on Systems Biology, Tsuroka, Japan, June 23-25, 2003. Program and Abstracts: 24.

Presented: Oral Podium Presentation.

Broderick G, Ru'aini M, Ellison MJ. A Parallel Particle-based Approach to Whole-cell Modelling. Int. E.coli. Alliance (IECA) Conference on Systems Biology, Banff, Alberta, Canada, June 18-22, 2004; Program and Abstracts: 13.

Presented: Oral Podium Presentation

Lopez-Campistrous A, Semchuk P, Burke L, Palmer-Stone T, Garen G, Brokx S, Broderick G, Bottorff D, Locke T, Weiner J. Localisation and Annotation of the Escherichia coli K-12 Proteome in the Presence and Absence of Amino Acids. Int. E.coli. Alliance (IECA) Conference on Systems Biology, Banff, Alberta, Canada, June 18-22, 2004.

Presented: Oral Podium Presentation.

Douglas DN, Lewis J, Broderick G, Bond D, Kneteman NM. Transcriptional profiling of HCV infection and treatment with interferon alpha in the chimeric mouse model for HCV infection. Proc. 3rd Int Dominique Dormont Conference: Viral Escape to Therapy in Chronic Infections, Ancienne Faculté de Médecine et de Pharmacie - Place de la Victoire, Bordeaux, France, Dec.7-9, 2006. Abstract O15: 38.

Presented: Oral Podium Presentation

Einecke G, Reeve J, Sis B, Broderick G, Halloran PF. The Alloimmune Response Induces Allospecific Changes of the Transcriptome within 24 Hours in Mouse Kidney Transplants. American Society of Nephrology, Renal Week 2006, San Diego, CA, Nov. 14-19, 2006.

Presented: Poster Presentation.

Broderick G, Einecke G, Famulski KS, Halloran PF. Dysregulation of Epithelial Repair Dynamics in Rejecting Mouse Kidney Transplants. American Society of Nephrology, Renal Week 2007, San Francisco, CA, October 31- November 5, 2007.  
Presented: Poster Presentation.

Broderick, G. Delayering the Data: Revealing Rejection in Human Kidney Transplants by isolating Gene Set Co-expression. Using the "Omic" technologies to Phenotype Disease: A Satellite Symposium of the 9th Banff Conference on Allograft Pathology. Edmonton, AB, June 18-19, 2007.  
Presented: Oral Podium Presentation

Broderick G, Einecke G, Mueller TF, Sis B, Halloran PF. Delayering the Data: Revealing Rejection in Human Kidney Transplants by Isolating Gene Set Co-Expression Patterns. American Transplant Congress, San Francisco, USA, May 5-9, 2007. Abstract 484: 273-274.  
Presented: Oral Podium Presentation

Einecke G, Broderick G, Sis B, Halloran PF. Early Loss of Renal Transcripts in Kidney Allografts: Epithelial Response to Injury and the Relationship to Morphologic Changes. American Transplant Congress, San Francisco, USA, May 5-9, 2007. Abstract 683: 325.  
Presented: Oral Podium Presentation

Broderick G, Schaefer C, Einecke G, Halloran PF. Identifying Changes in Gene Regulatory Motifs in Rejection of Human Kidney Transplants. Systems Biology: Global Regulation of Gene Expression, Cold Spring Harbor Laboratory, Long Island, N.Y., March 29 - April 1, 2007. Abstract 35.  
Presented: Poster Presentation.

Fuite J, Vernon SD, Broderick G. Neuro-endocrine and Immune Network Re-modeling in Chronic Fatigue Syndrome: An Exploratory Analysis. 7th Int. Conf. for the Critical Assessment of Microarray Data Analysis (CAMDA), Valencia, Spain, December 13-14, 2007. Abstract 32.  
Presented: Oral Podium Presentation.

Fuite J, Vernon SD, Broderick G. 2008. Understanding chronic fatigue using comparative cross-scale analysis of information networks. Systems Biology: Global Regulation of Gene Expression, Cold Spring Harbor Laboratory, Long Island, NY, March 27-30, 2008. Abstract 47.  
Presented: Poster Presentation.

Fuite J, Vernon SD, Broderick G. Re-modelling of neuroendocrine-immune interaction in Chronic Fatigue Syndrome. Department of Medicine Research Day, University of Alberta, Edmonton AB, May 29, 2008. Abstract 67.  
Presented: Poster Presentation.

Yang C, Vernon SD, Broderick G. Cognitive Performance in a Population-based Cohort of CFS Patients. 95th Annual Clinical Congress, American College of Surgeons, Chicago, IL, Oct. 11-15, 2009.  
Presented: Poster Presentation

Mueller T, Chen S, Broderick G, Luyckx V. Prediction Of The Ideal Post-Transplant Kidney Function For Living And Deceased Donor Organs. 2009 Organ Donation Congress, Berlin, Germany, Oct. 4-7, 2009; Abstract #88.  
Presented: Oral Podium Presentation.

Yang C, Vernon SD, Broderick G. Cognitive Performance in a Population-based Cohort of CFS Patients. 42nd Annual Summer Students Research Day, Faculty of Medicine and Dentistry, University of Alberta, Oct. 17, 2009. Poster 154.  
Presented: Poster Presentation

Benz-Zvi A, Lee JM, Broderick G. An MPC-based Approach to Robust Control of a Hypothalamic-Pituitary-Adrenal Axis Model. 6<sup>th</sup> IFAC Symposium on Robust Control Design, Haifa, Israel, June 16-18, 2009: paper TuM1.1.  
Presented: Oral Podium Presentation.

Broderick G, Fletcher MA, Vernon SD, Klimas N. Isolating Characteristic Immune Signals under Challenge in Gulf War Illness. Latest Research in Immunology, Int Assoc CFS/ME, Reno, NV, March 12-15, 2009. Abstract #3.  
Presented: Oral Podium Presentation.

Broderick G, Fuite J, Fletcher MA, Vernon SD, Klimas N. Remodeling of Lymphocyte-cytokine networks in Gulf War Illness under Challenge. Latest Research in Immunology, Int Assoc CFS/ME, Reno, NV, March 12-15, 2009. Poster Abstract #1.  
Presented: Poster Presentation.

Katz B, Fletcher MA, Taylor R, Vernon SD, Broderick G. Cytokine Expression as a Potential Prognostic Indicator in Post-infectious Fatigue. Special Symposium 11, Cytokines and Infectious Diseases, Joint Meeting of the International Cytokine Society (ICS) and International Society for Interferon and Cytokine Research (ISICR), Chicago, IL, Oct. 3-7, 2010. Abstract #1682.  
Presented: Oral Podium Presentation.

Fletcher MA, Broderick G, Klimas N. Biomarkers for CFS/ME. International Science Symposium on ME/CFS. Bond University, Queensland, Australia. Dec. 3-4, 2010: 3-9.  
Presented: Oral Podium Presentation.

Klimas N, Fletcher MA, Broderick G. A Systems Biology Approach to ME/CFS. International Science Symposium on ME/CFS. Bond University, Queensland, Australia. Dec. 3-4, 2010: 1.  
Presented: Oral Podium Presentation.

Broderick G, Ben Hamo R, Efroni S, Katz BZ, O’Gorman MRG, Nathanson L, Fletcher MA, Vernon SD, Taylor R. Linking Lymphocyte Metabolites with Clinical Course in Post-Infectious Fatigue. 10th Int IACFS/ME Conf for Physicians and Healthcare Professionals, Ottawa, ON, September 22-25, 2011.  
Presented: Oral Podium Presentation.

Broderick G, Ben Hamo R, Efroni S, Nathanson L, Fletcher MA, Vernon SD, Klimas N. Preferential Pathway Activation in Gulf War Veterans with Unexplained Neuroendocrine-immune Imbalances. 10th Int IACFS/ME Conf for Physicians and Healthcare Professionals, Ottawa, ON, September 22-25, 2011: Session #9, paper 77.  
Presented: Poster Presentation.

Vashishtha S, Barnes ZM, Broderick G, Zeng XR, Klimas NG, Fletcher MA. Lymphocyte population dynamics in Gulf War Illness during exercise challenge: a network analysis. ICCS 2013, the 28th International Clinical Cytometry Meeting, Fort Lauderdale, FL, October 11-15, 2013: Poster session II, poster #18.

Presented: Poster Presentation.

Harvey JM, Barnes ZM, Plitnik T, Broderick G, Zeng XR, Klimas NG, Fletcher MA. Mixed lymphocyte response to exogenous IL-15 in Gulf War Illness and Myalgic Encephalomyelitis/Chronic Fatigue Syndrome. ICCS 2013, the 28th International Clinical Cytometry Meeting, Fort Lauderdale, FL, October 11-15, 2013: Poster session II, poster #20.

Presented: Poster Presentation.

Vashishtha S, Harvey JM, Barnes ZM, Zeng XR, Klimas NG, Fletcher MA, Broderick G. Hot-wiring the immune communication network in ME/CFS. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

DeGraff S, Russell L, Medow M, Stewart J, Klimas NG, Broderick G. A Model-based Exploration of Cardiovascular Deficiency in Chronic Fatigue Patients with Orthostatic Intolerance. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

Craddock TJA, Fritsch P, Rice MA Jr., del Rosario RM, Miller DB, Fletcher MA, Klimas NG, Broderick G. Succumbing to the Laws of Attraction: Gender Differences in Homeostatic Drive and the Perpetuation of Chronic Illness. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

Fritsch P, Craddock TJA, del Rosario RM, Rice Jr MA, Smylie AL, Folcik VA, Fletcher MA, Klimas NG, de Vries G, Broderick G. Getting Down to Detail: Exploring the Sometimes Pathogenic Versatility of Discrete Immune Logic. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

Fernandes H, Harvey JM, Barnes ZM, Smylie AL, Jo YS, Razdan S, Collado F, Sol C, Balbin EG, Klimas NG, Fletcher MA, Broderick G. Chasing a Shifting Immune Baseline in Women with Chronic Fatigue Syndrome. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

Harvey JM, Hwang M, Vashishtha S, Barnes ZM, Klimas NG, Fletcher MA, Broderick G. Sex-hormone mediation of immune function as a driver of ME/CFS severity. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

Vashishtha S, Harvey JM, Barnes ZM, Zeng XR, Klimas NG, Fletcher MA, Broderick G. Fatigue severity and cellular dynamics of immune response in ME/CFS. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. San Francisco, CA, March 20-23, 2014. Poster session.

Presented: Poster Presentation.

Bowie A, Harvey JM, Katz BZ, Smith FA, O’Gorman MRG, Taylor R, Fletcher MA, Klimas NG, Broderick G. Tracking Post-infectious Fatigue in Clinic using Routine Clinical Lab Tests. IACFS/ME 11th Biennial Int. Research and Clinical Conference: Translating Science into Clinical Care. *Session: Advances in Pediatric ME/CFS Research - Part I*. San Francisco, CA, March 23, 2014.

Presented: Oral Podium Presentation.

Craddock TJA, Harvey JM, Singh SJ, Rice MA Jr., del Rosario RM, Klimas NG, Fletcher MA, Broderick G. Fire in the Head: Exploring the Role of Homeostatic Drive in the Perpetuation of Neuroinflammation and Brain Disorders. Miami 2014 Winter Symposium: The Molecular Basis of Brain Disorders, Miami, FL, January 26-29, 2014. Poster session 2.

Presented: Poster Presentation.

Patel G, Barker T, Craddock TJA, Fletcher MA, Klimas NG, Broderick G, Morris M. A Pilot Analysis of the Effect of Past Traumatic Events on the Neuroendocrine-Immune system and Behavior in Male Subjects with Gulf War Illness. Anxiety and Depression Conference 2015, Miami, Florida, April 9-12, 2015

Presented: Poster Presentation.

Toole JT, Craddock TJA, Rice, MA Jr., Broderick G, Klimas NG, Fletcher MA, Morris M. Exploring the Role of Homeostatic Drive in the Perpetuation of Depression and Anxiety Disorders. Anxiety and Depression Conference 2015, Miami, Florida, April 9-12, 2015

Presented: Poster Presentation.

Barker T, Russo S, Patel G, Broderick G, Craddock TJA. The Effect of Concussion History and Gender on Symptoms of Depression and Anxiety. Anxiety and Depression Conference 2015, Miami, Florida, April 9-12, 2015

Presented: Poster Presentation.

Patel G, Barker T, Craddock TJA, Fletcher MA, Klimas NG, Broderick G, Morris M. Past Traumatic Events’ Effect on Neuroendocrine-Immune System and Well-Being in Veterans With GWI. 2015 American Psychological Association Conference, *Session 2117 Part I - Military*, Toronto, Ontario, Canada, August 6-9, 2015. Poster M-3.

Presented: Poster Presentation.

Toole JT, Craddock TJA, Rice, MA Jr., Broderick G, Klimas NG, Fletcher MA, Morris M. Homeostatic Drive and the Perpetuation of Depression and Anxiety. 2015 American Psychological Association Conference, *Session 1179: Behavioral Neuroscience and Comparative Psychology*, Toronto, Ontario, Canada, August 6-9, 2015. Poster A-8

Presented: Poster Presentation.

Barker T, Russo S, Patel G, Broderick G, Craddock TJA. Examination of Concussion History and Gender’s Effect on Symptoms of Depression and Anxiety. 2015 American Psychological Association Conference, *Session 4058 Part II - Clinical Neuropsychology*, Toronto, Ontario, Canada, August 6-9, 2015. Poster Q-7.

Presented: Poster Presentation.

Broderick G, Toole JT. Recent Findings in Network Medicine: Implications for Psychology. 2015 American Psychological Association Conference, *Session on Optimizing Patient Outcome - The*

*Role of Psychology in Applying A Network Medicine Model*, Toronto, Ontario, Canada, August 6-9, 2015.

Presented: Oral Podium Presentation.

Broderick G. Integration and Context in Complex Illness: A Biobehavioral Systems Approach. 2015 American Psychological Association Conference, *Session 1300: Biobehavioral Assessment and Intervention for Complex Medical Illness*, Toronto, Ontario, Canada, August 6-9, 2015.

Presented: Oral Podium Presentation.

Barnes ZM, Eugene G, Urban J, Nathanson L, Waziry P, Harvey JM, Craddock TJA, Broderick G, Klimas NG, Fletcher MA. Markers of microbial translocation in myalgic encephalomyelitis / chronic fatigue syndrome. Miami Winter Symposia 2016, Miami, FL, Jan. 24-27, 2016; Abstr. MIAM2016\_0263.

Presented: Poster Presentation.

Govindan R, Barnes ZM, Jo Y, McKean R, Harvey JM, Craddock TJ, Klimas NG, Broderick G, Fletcher MA. Seeking a quantitative method to determine HHV-6 IgG antibody levels using qualitative ELISA. Miami Winter Symposia 2016, Miami, FL, Jan. 24-27, 2016; Poster P185.

Presented: Poster Presentation

Jeffrey MG, Nathanson L, Barnes ZM, Fletcher MA, Klimas NG, Broderick G, Craddock TJA. Gene expression modules in chronic fatigue syndrome: Interactions of the inflammatory and immune system. Miami Winter Symposia 2016, Miami, FL, Jan. 24-27, 2016; Poster P126

Presented: Poster Presentation.

Broderick G, Holovatyk A, Vashishtha S, Toole JT, Nierenberg BP. Reconciling Discrepancies in the Obesity Literature. American Psychological Association 2016 convention, *Session 16588: Applying Network Medicine: Reconciling Discrepancies in the Obesity and Chronic Pain Literature*, Denver, CO, Aug. 4-7.

Presented: Oral Podium Presentation

Holovatyk A, Broderick G, Nierenberg B. Hope: A Discriminating Variable Among Control, Overweight, and Obese Groups. American Psychological Association 2016 convention, Denver, CO, Aug. 4-7, 2016; **Poster XX**

Presented: Poster Presentation

Vashishtha S, Russell L, Michalovicz L, Kelley KA, Vrana JA, Locker AR, Barnes ZM, Craddock TJA, Fletcher MA, Klimas NG, Miller D, O'Callaghan J, Morris M, Broderick G. Stress Potentiation of the Brain's Immune Response to Neurotoxic Exposure in the Field: An Animal Model. Int Soc for Traumatic Stress Studies (ISTSS)/ Canadian Inst for Military Veteran's Health Research (CIMVHR) Meeting, *Traumatic Stress Research: Enabling Bedside Implementation*, Toronto, Canada, May 9-10, 2016. (poster board #3)

Presented: Poster Presentation

Toole JT, Rice MA jr., Nierenberg B, Craddock TJA, Fletcher MA, Klimas NG, Zysman J, Morris M, Broderick G. Increasing Resilience to Traumatic Events: Simulating the Protective Role of Well-Being. Int Soc for Traumatic Stress Studies (ISTSS)/ Canadian Inst for Military Veteran's Health Research (CIMVHR) Meeting, *Traumatic Stress Research: Enabling Bedside Implementation*, Toronto, Canada, May 9-10, 2016.

Presented: Poster Presentation

Michalovicz LT, Kelly KA, Locker AR, Vrana JA, Broderick G, Miller DB, O'Callaghan JP. Using novel ALDH1L1 bacTRAP technology to evaluate the astrocyte-specific responses to Gulf War Illness-related exposures. Society for Neuroscience: Neuroscience 2016. San Diego, CA, Nov 12-16.

Presented: Poster Presentation

Kelly KA, Locker AR, Michalovicz LT, Vrana JA, Vashishtha S, Broderick G, Miller DB, O'Callaghan JP. A mouse model of Gulf War Illness reveals a primed neuroinflammatory response to subsequent systemic inflammatory challenge. Society for Neuroscience: Neuroscience 2016. San Diego, CA, Nov 12-16.

Presented: Poster Presentation

Russell L, Broderick G, Harvey JM, Barnes ZM, Collado F, Balbin E, Klimas NG, Fletcher MA. Exploring the role of sex hormones in driving symptom severity in ME/CFS. 2016 Canadian Society of Internal Medicine (CSIM) Annual Meeting. Montreal, QC, Oct. 27.

Presented: Poster Presentation.

**Cournoyer J, ... Broderick G, ...** The Use of the Respiratory Exchange Ratio in Assessing the Metabolic Efficiency of Patients with ME/CFS and GWI. IACFS/ME12th International IACFS/ME Research and Clinical Conference: Emerging Science and Clinical Care. Fort Lauderdale, FL , October 27-30, 2016.

Presented: Poster Presentation

Russell L, Broderick G, Harvey JM, Barnes ZM, Collado F, Balbin E, Klimas NG, Fletcher MA. Exploring the Role of Sex Hormones in Driving Symptom Severity in ME/CFS. IACFS/ME12th International IACFS/ME Research and Clinical Conference: Emerging Science and Clinical Care. Fort Lauderdale, FL, October 27-30, 2016.

Presented: Oral Podium Presentation

Kelly K, Michalovicz L, Broderick G, Morris M, Klimas NG, Miller D, O'Callaghan J. Resetting homeostasis in Gulf War Illness, a computational biology hypothesis tested in a translational mouse model. Society of Toxicology 56th Annual Meeting, Baltimore, MD, March 12–16, 2017.

### **Invited International Scientific Presentations.**

Broderick G. A Parallel Particle-based Approach to Whole-cell Modelling. Invited Speaker, Banbury Centre Conference on Integrating Disparate Data to Simulate Lymphocyte Function, Cold Spring Harbor Laboratory, Long Island, N.Y., Sept. 19-22, 2004; Closed session.

Broderick G. CFS: From Constructs to Mechanisms", Invited Speaker, CDC Computational Challenge, Banbury Centre Workshop, From Markers to Models: Integrating Data to Make Sense of Biologic Systems, Cold Spring Harbor Laboratory, Long Island, N.Y., Sept. 18-21, 2005; Closed session.

Broderick G. The Virtual Cell Model: Exploring Emergent Behaviour in Nature's Inherent Integration Milieu, Invited Speaker, Realistic Modelling of Biological Systems: A First International Workshop, Weizmann Inst. of Science, Rehovot, Israel, May 2-4, 2005.

Broderick G. Integrating a Model Biological Membrane and Virtual Cytoplasm. Invited Speaker, Realistic Modelling of Biological Systems: A First International Workshop, Weizmann Inst. of Science, Rehovot, Israel, May 2-4, 2005.

Broderick G. Building a Large-scale Functional Model of a Biological Membrane. Invited Speaker, Faculty Talk, Center for Complexity Science, Weizmann Inst. of Science, Rehovot, Israel, May 1, 2005.

Broderick G. Composite Features of Fatigue. Invited Speaker, Computational Challenge, US Centers for Disease Control and Prevention (CDC), Atlanta, GA, March 15, 2006.

Broderick G, Ben-Zvi A, Aslakson E, Klimas N, Vernon SD. An MPC-guided Approach for the Regulation of Cortisol in a Hypothalamic-pituitary-adrenal Axis Model. Centers for Disease Control and Prevention (CDC), Atlanta, Georgia, Aug. 29, 2007.

Broderick G, Bolshin C, Aspler AL. Evidence of Lymphocyte Imbalance in Wichita Study of CFS sufferers. US Centers for Disease Control and Prevention (CDC), Atlanta, GA, August 27, 2007.

Klimas N, Fletcher MA, Broderick G. Gulf War Syndrome: A Systems Biology Approach. **Keynote address**, Acad. Behavioral Medicine Ann. Meeting, Lake Louise, AB, June 14-16, 2008.

Vernon SD, Fuite J, Broderick G. Genetic Variation and Altered Immune Activity in Chronic Fatigue Syndrome. 6<sup>th</sup> Int Conf HHV-6 Foundation, Int Symp on Viruses in Chronic Fatigue Syndrome and Post-viral fatigue, Baltimore, MD, June 22-23, 2008.

Vernon SD, Fuite J, Broderick G. Neuroendocrine and Immune Network Re-modeling in Chronic Fatigue Syndrome. Integrative Neural Immune Interest Group (INIIG) Lecture Series, National Institute of Mental Health, Bethesda, MD, March 4, 2008.

Broderick G. Agent-based Models in Medicine: the Promise and the Challenges. **Keynote** speaker. SwarmFest 2008, Northwestern University Feinberg School of Medicine, Chicago IL, May 12-13, 2008.

Broderick G. Subtle Immune Signatures in Chronic Fatigue Syndrome and Gulf War Illness. From Infection to Neurometabolism: A Nexus for CFS. The Banbury Centre, Cold Spring Harbor Laboratory, Long Island, NY, Sept. 13-16, 2009; Closed session.

Broderick G, Klimas N. Immune Network Dysfunction in Gulf War Illness. Research Advisory Committee, U.S. Department of Veterans Affairs, Boston, MA, June 29-30, 2009.

Broderick G. Chronic Fatiguing Illnesses: Immune Signatures and Beyond. Research Roundtable Guest Speaker. The CFIDS Association of America, Chicago, IL, May 3, 2009.

Broderick, G. Molecular Profiling of Post-infectious fatigue. Expanding Research: Building on your Investment. CFIDS Association Outreach Webinar, Oct. 5, 2010.

Broderick, G. Networked Regulatory Systems in Complex Illness. Developmental Center for AIDS Research. University of Miami, Miami, FL, February 16, 2010.

Broderick, G. A Systems Biology Approach to Understanding Homeostasis Reset - the CFS/GWI Experience. John P. Hussman Institute for Human Genomics, University of Miami, Miami, FL, February 16, 2010.

Broderick, G. Shifting Immune Conversations: A Systems Biology Approach to Gulf War Illness and CFS/ME. US Veterans Affairs, Miami Veterans Affairs Medical Center, Miami, FL, March 26, 2011.

Broderick, G. Immune System Dynamics in CFS/ME. State of Knowledge Workshop on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS) Research. US National Institutes of Health (NIH), Bethesda, MD, April 7-8, 2011.

Broderick, G. From Cytokines to Cells to Gene Expression: An Integrative Approach to the Study of Gulf War illness. Research Advisory Committee, U.S. Department of Veterans Affairs, Washington, DC, June 27-28, 2011.

Broderick, G. A System Biology Perspective of CFS. Meeting of the Scientific Advisory Board of the CFIDS Association of America, The Banbury Centre, Cold Spring Harbor Laboratory, Long Island, NY, Sept. 26-27, 2011; Closed session.

Broderick, G. Circuit Analysis for Intervention Design. Meeting of the Scientific Advisory Board of the CFIDS Association of America, The Banbury Centre, Cold Spring Harbor Laboratory, Long Island, NY, Sept. 30-Oct. 3, 2012; Closed session.

Broderick G, Fletcher MA. Introducing the new GWI Consortium. Inaugural Patient Conference, Institute for Neuro Immune Medicine, Nova Southeastern University, Fort Lauderdale, FL., January 26, 2013.

Barnes Z, Fletcher, MA, Broderick G, Klimas NG. The Use of Multiplex Cytokine Analysis in Complex Multisystem Disorders. Invited speaker, Closed meeting, Quansys Biosciences, Logan, Utah, March 10, 2013.

Klimas NG, Fletcher MA, Broderick G. A Translational Medicine Approach to ME/CFS Using Computational Modeling for Selecting Subgroups and Therapeutic Targets: A P01 Outline. Reverse site visit to Dr. Timothy A. Gondré-Lewis, Ph.D., Program Officer/COR Immunoregulation Section, Basic Immunology Branch Division of Allergy, Immunology, and Transplantation. US National Institute of Allergy and Infectious Diseases (NIAID), Bethesda, MD, Feb. 13, 2013

Broderick G, Using Systems Thinking to Capture Interactivity and Complexity. Meeting on Mechanisms of Accelerated Aging in Cancer Survivors. US National Cancer Institute (NCI), Rockville, MD, Sept. 25-27, 2013.

Broderick G, Craddock TJA, Identifying therapeutic strategies in Gulf War Illness with systems biology. Meeting of GWI Research Advisory Committee, U.S. Department of Veterans Affairs, Washington, DC, January 7-8, 2014.

Broderick G., Klimas NG: Briefing on research in translation medicine on Gulf War Illness to the staff of **Senator Bernard "Bernie" Sanders** from Vermont, Washington, DC, January 8, 2014.

Broderick G, Mapping the immune connectome to treat disease: Simulating virtual interventions. Invited Guest Lecture, US Centers for Disease Control and Prevention (CDC), National Institute for Occupational Safety and Health (NIOSH), Morgantown, WV, February 25, 2015.

Broderick G, Navigating the Networked Biology of Complex Chronic Illness. Invited Guest Lecture. Rochester General Hospital Research Institute, Rochester, NY, July 20, 2016.

### **Invited National/Regional/Local Presentations**

Broderick G, Ru'aini M, Winters P, Chan E, Ellison MJ. Towards a Life-like Virtual Cell Using Discrete Automata. Departmental Seminars in Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta, Canada, December 2, 2004.

Broderick G. The Virtual Cytoplasm: Exploring Complex Intra-cellular Kinetics. Department of Mathematical & Statistical Sciences, University of Alberta, Edmonton, Alberta, Canada, Feb. 27, 2006.

Broderick G, Schaefer CF, Einecke G, Halloran PF. Identifying Changes in Gene Regulatory Motifs in Rejection of Human Kidney Transplants, Department of Biochemistry, University of Alberta, Edmonton, Alberta, Canada, Jan. 25, 2008.

Broderick G. Discovery Learning: A Preceptor's Impressions. Academic Half-day, Geriatric Division, Glenrose Rehabilitation Hospital, Edmonton, AB, June 16, 2009.

Broderick G. CFS/ME Lifting the Veil on a Complex Illness. Guest Speaker, M.E. Awareness Day, M.E. Society of Edmonton, Edmonton, AB, May 11, 2009.

Broderick G. Shifting Immune Conversations in Complex Chronic Illness: An Information Network Perspective. Dept. of Epidemiology and Community Health, University of Ottawa, Dec. 6, 2010.

Broderick G. CFS/ME Out of the Shadows. Guest Speaker, M.E. Awareness Day, M.E. Society of Edmonton, Edmonton, AB, May 12, 2010.

Broderick G., ME/ CFS: Identifiable, Treatable, Fundable. Invited report to the **Chief Medical Officer**, Alberta Health Services, Edmonton, AB, May 10, 2013.

Broderick G. ME/ CFS: Identifiable, Treatable, Fundable. Invited Speaker, **Members of Canadian Parliament and Senate**, Parliament Hill, Ottawa, ON, May 7, 2013.

Broderick G. ME/ CFS: Identifiable, Treatable, Fundable - A Cross-border Perspective. Invited Speaker, **Public Health Agency of Canada, Canadian Institutes of Health Research**, PHAC Offices, Ottawa, ON, May 12, 2014.

Broderick G. Simulating the systems biology of immune therapy. Guest faculty seminar, Department of Cell and Systems Biology, University of Toronto Scarborough, Scarborough, ON, April 30, 2015.

Broderick G. ME/ CFS: A Path Forward. Invited Speaker, **Members of Canadian Parliament and Senate**, Parliament Hill, Ottawa, ON, May 12, 2016.

## **Patents.**

Broderick G, Lanouette R, Valade JL, 1995. Optimal Energy Refining Method for the Mechanical Treatment of Wood Fibres. Canadian patent 2,150,647 (November 30, 95), U.S. patent 5,540,392 (July 30, 1996).

Ellison MJ, Broderick G, Ru'aini M, Bottorff D, Wishart D, 2004. System and Method for Simulating Living Cell Processes. Patent Cooperation Treaty PCT/CA2004/000369 (May 5, 2004), U.S. provisional patent appl. #60/453,257 (March 10, 2003).

Broderick G, Ru'aini M, Ellison MJ, 2004. System and Method for Simulating Biological Cell Membrane Processes. Patent Cooperation Treaty PCT/CA2005/000795 (May 25, 2005), U.S. provisional patent appl. #60/575,089 (May 28, 2004).

Fletcher MA, Broderick G, Klimas NG, 2013. Dysregulation of Cytokines in Gulf War Illness and Myalgic Encephalomyelitis/Chronic Fatigue Syndrome (ME/CFS). U.S. provisional patent appl. #61890297 (October 13, 2013). International Patent Cooperation Treaty (PCT) Publication Number WO 2015/054701 A2 (Filed October 14, 2014; published April 16, 2015).

## **Media Coverage.**

Interview with scientific visualisation results used by Hapgood F. A Microbe Enters the Matrix: How model bacteria will transform biology. Wired Magazine. Issue 11.09 | September 2003.

Interviewed and quoted by Constans A. Pharma companies turn to computer simulations to complement experimentation and trial design. Regarding massively parallel computer model of whole cell molecular mechanics - Project CyberCell. Desktop Drug Discovery. The Scientist 2004, 18(4): 33. (<http://www.the-scientist.com/article/display/14482/#ixzz1K5sjuFJU>)

Press release announcing award of CFIDS Association grant to PI Broderick for the study of post-infectious fatigue. Picked up by 75 news outlets including Reuters, AOL Money News, Forbes, the Los Angeles Times and Houston Chronicle among others. December 3, 2008.

Interview with Mr. Kirk Fernandes, Medical Unit Producer, The Dr. Oz Show, as part of background research for segment on XMRV and viral triggers of chronic fatigue syndrome. November 2, 2009. (Aired December 3, 2009).

Interviewed and quoted by Zdeb C, Waking up to the reality of chronic fatigue. Describing his new study of EBV-induced metabolic and immune dysfunction. Canwest News Service, Published: Saturday, April 18, 2009 in Edmonton Journal and affiliated CanWest newspapers.

Correspondence regarding research into post-infectious fatigue with Diane R. Bean, Senior Coordinator, International Programs Division, Office of Policy and Public Affairs, Bureau of Consular Affairs, U.S. Department of State. February 5, 2009.

Press release by Public Library of Science (PLOS), via EurekAlert! Newswire, a service of AAAS. Reported by several subscribing news outlets such as the Washington Post: Tweaking Hormones Might Ease Chronic Stress. January 27, 2009.

Interviewed live on the air as invited guest on Peter Brown show RadioActive CBC Radio, regarding his new US award to study of post-infectious fatigue syndrome, CBC Studios, Edmonton, January 8, 2009.

Interview with Amy Dockser Marcus (Pulitzer Prize 2005, Beat Reporting), Wall Street Journal, January 13, 2011, regarding the latest discoveries in chronic fatigue research and the promise of a systems biology approach to diagnosis and treatment.

Interview with Ryan Prior (writer/ film-maker USA Today), ME/CFS documentary “The Blue Ribbon”, October 25, 2013, regarding the new Institute for Neuro-immune Medicine and the Clinical Systems Biology group in energizing discovery in chronic fatigue research.

Interview with Nicole Grether, Field Producer for **Al Jazeera America**, December 9, 2013, ‘Chronic fatigue syndrome activists launch 'uprising' from their beds’, aired on America Tonight news show, January 3, 2014, regarding the new Institute for Neuro-immune Medicine and related to the documentary ‘Canary in a Coal Mine’ by Jennifer Brea.

Broderick lab featured in International Innovations magazine, Research Media EU, Feb. 2014: 78-81.

Interview with Rob Wijbenga, Chair to the ME/cvs Vereniging, Netherlands. ME/CFS outreach project “Science to Patients”, subsidized by the Dutch Ministry of Health, October TBD, 2014, regarding the new Institute for Neuro-immune Medicine and the Clinical Systems Biology group in energizing discovery in chronic fatigue research.

Broderick lab and Institute for Neuro-immune Medicine profiled in feature-length documentary by Coqui Pictures/ Electric Puzzle Productions entitled “The Forgotten Plague: M.E. and the Future of Medicine”. Directed and Produced by Ryan Prior and Nicole deCastillo. Premiered at the Chinese Theater in Hollywood, California, Oct. 26, 2015.

Broderick lab featured at eMerge Americas, an innovation event connecting revolutionary startups, cutting-edge ideas, and global industry leaders & investors across North America, Europe, and Latin America. “Complex Illness and the Human Computer“, May 1-5, 2015.